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## REPORT OF TASK FORCE

# Agricultural Biological Literature Exploitation



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UNITED STATES DEPARTMENT OF AGRICULTURE

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U. S. DEPT. OF AGRICULTURE  
NATIONAL AGRICULTURAL LIBRARY

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*A systems study of the National  
Agricultural Library and its users.* +3a

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Submitted by X Earl Hoisington, Task Force Leader



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NATIONAL AGRICULTURAL LIBRARY,  
UNITED STATES DEPARTMENT OF AGRICULTURE  
MARCH 1965

# TASK FORCE ABLE

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## FOREWORD

A library is only as good as its ability to provide those seeking information with access to the material they need. As the written record of man's knowledge increases, the essential task of our libraries becomes more difficult. There is more published information to be placed where it can be readily used, and there are more people asking for this information. New systems and techniques for communicating this information are proliferating, and they must be evaluated.

The National Agricultural Library, as a large research library faced with these problems, has sought to meet them before they become unmanageable. A USDA task force has made an exhaustive management and systems study of the library, and its report is now complete. The task force has opened new areas of thought and planning in library science which will benefit all the nation's libraries. The report will, as well, enable the Department to apply the technology of the computer age to the task of storing and retrieving information so that the Library will continue to effectively serve the scientists and researchers.

ORVILLE L. FREEMAN  
Secretary of Agriculture

For the past decade the National Agricultural Library has been anxious to have a complete assessment made of its activities and of its role in departmental and national activities.

The Library's first attempt at objective evaluation was an interagency committee within the Department of Agriculture which studied the scope and support of the Library and issued a confidential report to the Secretary of Agriculture in June 1958. The study was helpful to the Library administrators in developing long-range plans and in the establishment of zero based and project supported budgets.

The Library pioneered in the use of automation activities. As early as 1910 it was concerned with exploring the possibilities of some simple and cheap method of exact reproduction to ease the problems of interlibrary loan. Reports show that in 1911 typewritten or photographic copies of articles were furnished to out-of-town borrowers. The 1912 report states "A number of copies, either typewritten or photographic, of articles in periodicals were supplied in cases where the volumes could not be conveniently sent." In 1934 with the cooperation of the American Documentation Institute the Library administered the first experimental center for supplying microfilm and photocopy of articles on a large scale to scientific workers.

The service was an immediate success and the next problem was to provide satisfactory reading equipment. Science Service with a grant from the Chemical Foundation, began the development of mechanisms needed for all phases of film copying and utilization.

Later a device called the "Rapid Selector" a machine to store knowledge on microfilm so that it could be rapidly scanned, selected and photographed for the user was developed by Librarian Ralph R. Shaw.

In 1943 a machine was developed which took pictures in a continuous strip, this was followed by the construction of a machine for developing and drying in a continuous strip.

The "Photoclerk" was invented by Dr. Shaw in the 1950's, this device used photographic procedures to replace manual typing operations. Following preliminary experimentation in the Department of Agriculture Library, a grant from the Carnegie Corporation enabled other libraries to participate in a nation-wide study of the application of the new technique, to library efficiency.

Because of its pioneering contributions in automation the Library felt that a thorough analysis of its procedures would be of importance in determining the usefulness of present day technology in both the improvement of its services and in providing economies.

Early in 1962, Foster E. Mohrhardt, Director of the National Agricultural Library, formally requested that consideration be given to the possibility of establishing a study of the Library on a priority basis. He particularly wished to have a feasibility study made of the function and services of the National Agricultural Library to determine which would lend themselves to automation. He also requested that a task force be set up to handle this function.

On April 13, 1962, Joseph M. Robertson, Assistant Secretary for Administration, replied: "I have asked the Office of Management Appraisal and Systems Development to design and present in detail the concepts of an information retrieval system [for the National Agricultural Library]. ...I believe we have the capacity to accomplish this project with our own personnel. To accomplish this for the second largest Government Library will be a significant achievement."

Task Force ABLE (Agricultural-Biological Literature Exploitation) was established, and this comprehensive report has resulted.

# T A B L E   O F   C O N T E N T S

	Page		Page
Foreword	i	Section Two: SAMPLING METHOD & REQUIREMENTS	
Preface	ii	QUESTIONNAIRE - Continued	
Section One: RECOMMENDATIONS AND BROAD		Requirements Questionnaire - Continued	
SYSTEMS DESIGN		Text	40
Introduction	1	Summary	40
Recommendations	1	General	40
Comments	1	Sources	41
History	2	Requirements	43
Proposed System	4	List of Charts & Statistical Tables	45
Bibliography of Agriculture	4	Charts	46
Broad System	4	Statistical Tables	58
Author Index System Specifications	5	Specialties List - Field of Interest	77
Present Manual System	5	Method of Analysis	77
Automated System	6	Copy of Specialties List with Number of Responses	
Projection of Citation Production	6	to each Title	80
Production Costs	7	Rank of Major Fields, Sub-fields, and Specialty	
Present System	7	Title	85
Automated System	8	"Methods" as Primary Interest in the Field	88
Input-Output Flow Chart	10	Age of Material in Field of Interest Text	89
Optical Scanner Sample Input	11	List of Charts and Statistical Tables	90
Author Index Output Sample	12	Major Fields of Interest by Scientists' Discipline	
Preliminary Description of Automated Subject		Groups	91
Indexes	13	Age of Material - Discipline Group Field of	
Condensed Input-Output Flow Chart for		Interest Compared with All Disciplines	92
Bibliography of Agriculture	15	Fields of Interest and Scientists' Discipline Groups	94
Acquisitions	16	Age of Material in Fields of Interest:	96
Narrative	16	Major Fields of Interest	96
Ordering - Flow Charts	17	Sub-fields of Interest	99
Receiving - Flow Charts	19	Discipline Group Field of Interest Compared	
Periodicals and Other Serials	20	with All Disciplines	107
Narrative	20	Age of Material - Major Fields of Interest &	
Check-in and Binding - Flow Chart	24	Selected Sub-fields	120
Inventory - Flow Chart	25	Comments of Scientists Reported on Questionnaire	126
Circulation	22	Summary	126
Narrative	22	Comments Classified in 12 Groups	127
Flow Chart	26	1. Present Services	127
Cataloging	22	2. New Services	135
Narrative	22	3. Reinstate Routing Periodicals	137
Subject Analysis in NAL (Combination of Subject		4. Photocopy or Reprint Service	139
Authority File & Bibliography of Agriculture		5. Translations and Foreign Collection	140
Subject Headings)	27	6. Indexes or Abstracts Other than NAL	140
Section Two: SAMPLING METHOD & REQUIREMENTS		7. NAL Collection Needs	141
QUESTIONNAIRE		8. Improve Techniques or Procedures	142
Development of Questionnaire	30	9. Criticism of Individual or Agency	143
Number of USDA Research Personnel by Civil		10. Personal Contacts as Sources of Information	143
Service Class Series	31	11. Interlibrary Loan Service	144
Sampling Plan		12. General	144
Population of USDA Research Scientists	33	Section Three: LIBRARY SERVICES QUESTIONNAIRE	
Selecting Sample & Mailing Procedures	33	Copy of Questionnaire	147
The Survey		List of Charts and Statistical Tables	152
Response Rate for Two Questionnaires	34	Respondents	153
Requirements Questionnaire		Text:	153
Respondents by Grade & Area	35	Facilities (Question 3)	153
Copy of Questionnaire	36	Library Services (Question 4)	155



### Section Three: LIBRARY SERVICES QUESTIONNAIRE

Continued

Text - Continued

Suggested Ways of Keeping Informed (Question 5)	164
Search Tools (Question 6-11)	165
Agency Bibliography or Card Catalog	165
Permuted Title Indexes	166
Research Duplication	167
Evaluation of Two Sources - Bibliography of Agriculture & Biological Abstracts:	167
See Issues	167
Availability of Two Sources	171
Acquainted with Content Arrangement	174
Use of Publication - To Select Reference & Current Awareness	175
Adequacy of Literature Coverage	175
Cumulative Author Index & Subject Index	176
Published Indexes of Equal or Greater Value than The Bibliography of Agriculture or Biological Abstracts	178
Discussion by Scientists Disciplines Groups	179
List of Indexes of Equal or Greater Value than the B of A or BA:	184
Rank Listing	184
Alphabetical Listing	185
Statistical Summary of Questions 3-20, by Grade Groups and Areas	187
Comments on Question 5 - Suggested Ways of Keep- ing Informed; Comments Classified in 11 Cate- gories:	198
1. Circulate Copies of Table of Contents	198
2. Provide Abstracts	201
3. Provide Table of Contents & Abstracts	204
4. Selective Dissemination of Information	205
5. Periodicals Should be Routed	207
6. Information as to Services Available	209
7. Special Bibliographies	210
8. Supply Reproductions	211
9. Responsibility of Research Worker	211
10. Other Suggestions	212
11. Satisfied with Present Service	215
Comments on the Bibliography of Agriculture - Questions 21 & 22, Classified in 7 categories:	218
Summary	218
1. General	219
2. Promptness of Publication	220
3. Subject Index & Indexing	220
4. Formats & Organization of Materials	222
5. Citations	223
6. Scope of Coverage	224
7. Classification	225

### Section Four: THE NATIONAL AGRICULTURAL LIBRARY SYSTEM AS OF 1962

Technical Services	227
Narrative	227
Division of Acquisitions	227
Statistics	228
Division of Catalog & Records	230
Statistics	231

### Section Four: THE NATIONAL AGRICULTURAL LIBRARY SYSTEM AS OF 1962 -

Continued

Technical Services - Continued	
Master Logic Flow Charts	233
Division of Acquisitions	234
Division of Catalog & Records	239
Flow Process Charts	242
Division of Acquisitions	242
Order Section	243
Publication Selection Section	259
Division of Catalog & Records	274
Catalog Section	274
Records Section - Current Serial Records	286
Records Section - Other	298
Preparations Section	304
Forms	306
Public Services	313
Division of Reference	313
Narrative	313
Statistics	315
Master Logic Flow Chart	319
Flow Process Chart	322
Division of Lending	326
Narrative	326
Statistics	329
Master Logic Flow Chart	330
Flow Process Chart	340
Loan Requests	341
Copy in Lieu of Publication	353
Charge Procedures	355
Discharge Procedures	360
Interlibrary loan	369
Photo Duplication	373
New Publications Received	380
Forms	383
Field & Special Services	384
Division of Indexing & Documentation	384
Introduction	384
Monthly Issue of Bibliography of Agriculture	385
Narrative	385
Work Flow Chart	391
Flow Process Chart	392
Annual Issue of Bibliography of Agriculture	401
Narrative	401
Work Flow Chart	404
Flow Process Chart	407
Division of Field Services	403
Section Five: RESEARCH STUDIES	
NAL Costs for Fiscal Year 1962	413
Determination of Work Units by Function	414
Work Unit Cost of Functions	414
Summary of Costs	415
Distribution of Cost of Supervision to Functional Organizations	417
Orientation & Information Retrieval Education of NAL Task Force "ABLE"	420
Circulation: An Analysis of Material & Users in a three Month Period in 1962	423
List of Charts and Statistical Tables	423

	Page
Section Five: RESEARCH STUDIES - Continued	
Circulation: An Analysis of Material & Users in a three Month Period in 1962 - Continued	
Narrative & Charts	425
Origin of Material	425
Age of Material Discharged	431
Classification & Frequency of Use of Material	431
Frequency List of Titles Requested Ten Times or More	436
Alphabetical List of Titles Requested Five Times or More	439
Comparison of Index Medicus to Bibliography of Agriculture	446
Serial Transit Study (Work measurement & time of process)	448





# RECOMMENDATIONS AND BROAD SYSTEMS

## INTRODUCTION

Leaders in government and industry are finding that the productivity of our civilization has by its very nature created an ever increasing technological problem. At present, the increasing amount of scientific and technical literature makes it impossible for scientists and technical workers to follow up on all of the new literature related to their fields. In addition, the problems of acquisition, preservation, dissemination and bibliographic access to this literature are acute. Since scientific and technical research forms a large part of the work of the Department of Agriculture, we in agriculture must share in the solution of these problems.

The information retrieval Task Force "ABLE" (Agricultural Biological Literature Exploitation) was formed to study these problems and find a solution applicable to the field of agriculture. The task force was urged to consider the application of electronic computers to the storage and retrieval of information.

This report is presented with the philosophy that the advent of automation does not change the basic responsibility of any library. Automation's relationship to libraries is one of means and not purpose. The importance of this new tool is that new services are becoming economically feasible.

The main goal is that through automation, the National Agricultural Library may help provide an intellectually stimulating environment for our research scientists as well as all our library users.

## RECOMMENDATIONS

1. The National Agricultural Library should establish a joint study group composed of library personnel, scientific specialists and the task force leader. They should study the results of the two questionnaires and interpret the needs of the scientist in terms of specific services, taking into consideration the variance in the disciplines.

2. The task force leader should work with the library staff to accomplish two goals; first, to automate immediately those functions which will produce a cost saving per unit of work. This may take the form of increased service for the same cost, or savings in manpower which may be re-applied to increased service. Second, to use the suggestions of the above Study Group in developing the system specifications for the automation of the National Agricultural Library.

3. The National Agricultural Library should establish a position for one or more system analysts to define the details of the system specifications under the guidance of the task force leader from the Office of Management Appraisal and Systems Development.

## COMMENTS

In addition to the above recommendations the following is presented:

1. The greatest need of the National Agricultural Library is a modern building to adequately house the present collection and provide space for future acquisitions.

2. The present manual methods of the National Agricultural Library are very efficient and professional. Except for a few areas of high volume manual sorting, mechanization of the present work will not result in monetary savings.

3. The total worth of the new and increased service must be measured by the increased productivity of the library clientele, not by the increased expenditures. The only cost comparison that can be made is the cost of the new system versus what it would have cost to produce the new output under the old system.

4. It is not possible at this stage of development to determine the cost of the proposed system. A rough estimate of two million dollars for the complete systems and programming can be made based on the cost of other data processing systems of this magnitude.

5. It is advisable to begin work in automation before the details of the perfect system have been finished. To wait for the documentation of the perfect system before any movement is made toward it is to deter progress.

6. Possible areas for immediate automation are:

- a. Author Index for Bibliography of Agriculture (already started).
- b. Addition of a monthly subject index and production of the annual index for the Bibliography of Agriculture.
- c. Catalog card preparation including a machinable record for producing other products.
- d. Production of Titles Indexed in Bibliography of Agriculture.

- e. Update Subject Authority List.
- f. Selective Dissemination of Information system to include a customized Title Service by Journal and permuted Title index according to user profile.
- g. Complete production of Bibliography of Agriculture, producing records to be used later in an information retrieval system.
- h. Titles Received by NAL.
- i. Current Serial Records.
- j. Research Project files (CSESS, ARS, AMS).

This area-at-a-time approach will result in more realistic cost estimates. It will also facilitate the application of new methods and equipment into the total system.

7. Judging from the written comments on the scientists questionnaires, awareness of present library services available is also a problem. The small pamphlet of NAL service is apparently lost in today's deluge of high pressure advertising. Under the new administration of Research and Education there should be a program of educating the department scientists as to services available and how they can make better use of these services.

8. The new library should contain a positive inventory control of all library holdings. It is most discouraging for a person to be told that a much needed publication cannot be found and asked "does he want the library to search for it?"

## HISTORY OF THE TASK FORCE

Soon after Secretary Freeman was appointed, he inaugurated a pioneering effort in the Department--"The Self-Survey". The "Self-Survey" approach to management improvements which the Secretary established in December of 1961, has proven to be an effective means of accomplishing efficiency and economy in Department operations. The "Self-Survey" concept becomes reality in the organization of the Task Force. Composed of a variety of specialists from agencies and staff offices, the Task Force is able to conduct evaluations of operating systems and to recommend improvements in program and management operations.

The Office of Management Appraisal and Systems Development (OMASD) became active in the field of information retrieval late in 1961. In March 1962 the Director of the National Agricultural Library (NAL) formally requested OMASD to make a feasibility study. The request was:

"The Library would like to have your office make a feasibility study of the Library's functions and services to determine those which may lend themselves to automation."

"In addition, we would like to have a task force examine, in depth, those areas which they feel can be automated, and submit to the Library detailed plans for conversion, including procedures, types and costs of equipment, projected calendars of action, staff requirements, and estimated savings."

"We have made some preliminary studies of some activities, and are particularly anxious for advice in the following areas:

1. Monthly Key Word in Context Index for the Bibliography of Agriculture.
2. Subject Headings Study to Combine Headings used in the Public Catalog and the Bibliography of Agriculture.
3. Charging and Discharging Materials on Loan.
4. Ordering, Receipting and Recording of Serials.
5. Storing and Retrieving Published Information for special bibliographic uses, with priority on agricultural economics literature.
6. Facsimile Transmission of Library Materials from both bound and unbound sources.
7. Coordination of suggested automation functions with other libraries to avoid duplication of effort.
8. Automatic shelf-reading.
9. Microstorage."

In addition, the NAL requested OMASD to set up a task force to handle this project. OMASD agreed to direct the task force and secured the members from various agencies and the physical location from the NAL. OMASD also started looking for someone with ADP experience to direct the task force. The membership was planned to be as follows: Agricultural Research Service (2), Forest Service (2), Economic Research Service (2), Agricultural Stabilization and Conservation Service (1), Soil Conservation Service (1), Agricultural Marketing Service (2), Land-Grant Colleges (3), Library (2), Management Data Service Center (1), OMASD (1). As it turned out the task force was composed of Agricultural Research Service (4), Forest Service (1), Agricultural Stabilization and Conservation Service (2), Soil Conservation Service (2), Land-Grant Colleges (2), Library (2), Office of General Counsel (1), Statistical Reporting Service (1), Office of Information (1), OMASD (1), National Bureau of Standards (1). The professions of the task force members were: entomologist, soil scientist abstractor, writer, lawyer, accountant, statistician, computer center director, computer systems analyst, and librarians from Forest Service, universities and the NAL.

The task force was launched with a series of meetings April 24 through 26. The Administrative Assistant Secretary of Agriculture presented the opening remarks followed by the Director and Assistant Director of OMASD. They discussed "The Task Force concept, its organization and objectives". The Director of the Library presented the NAL program for the benefit of the task force members. Films were used to show graphically some of the progress in the information field. Talks by Library staff members dealt with different phases of information dissemination, with special reference to the NAL functions.



On April 25th the Assistant Director of OMASD defined the task force objective. He outlined three studies needed to reach the point where recommendations could be proposed. They were:

1. To find out what it is the research people want and what system can produce it.
2. To determine the design of a computing system that could efficiently handle the Library's information.
3. The costs of Library research under various systems.

It was also determined at this time that a final report would be required after the studies were completed.

The task force was divided into four work groups: a Systems Requirements Group, a Systems Design Group, a Cost Group, and a Report Writing Group. Functions of the first three groups were outlined as follows:

A. Systems Requirements Group

1. Identify users
2. Visit and determine users' needs
3. Determine volumes of input and output
4. Determine conversion volumes
5. Give recommendations to over-all Task Force

C. Cost Group

1. Determine present costs of:
  - a. Library functions
  - b. Information systems in the agencies
2. Efficiency of present information operations
3. Costs of proposed systems and comparison with present costs
4. Agency costs in keeping its scientists informed

B. Systems Design Group

1. Explore compatibility requirements
2. Visit other installations
3. Lay out proposed system and review it with task force
4. Identify computer runs
5. Lay out master tapes
6. Apply volumes to determine computer time
7. Furnish Cost Group with computer time and personnel requirements
8. Computer Schematics
9. Statement of System

The Assistant Director of OMASD informed the group that Statistical Reporting Service, USDA, was scheduled to get a general purpose computer of high capability and this presumably would take care of the Library's need for a computer.

During the next four weeks the task force members spent their time studying the literature available and making field trips to various related projects and equipment manufacturers. For a detailed account see the section "Task Force Orientation and Information Retrieval Education." An impressive amount of verbal information was given to the task force by speakers from Central Intelligence Agency, National Library of Medicine, Library of Congress, Office of Science Information, National Science Foundation, Patent Office, Bureau of Standards, Office of Technical Services, Dept. of Commerce, ASTIA, Univ. of Illinois, Remington Rand, IBM, General Electric, Documentation, Inc., CEIR and other manufacturers.

The Systems Requirements Group designed a questionnaire, the Cost Group started work on the fiscal 1961 costs, and everyone had been studying this field which was entirely new.

On May 28, 1962 the Task Force leader was assigned to the project. He was new to the Information Retrieval field, his total experience having been in computer systems design and operations research.

The first two assignments of the Systems Requirements Group were worked upon first. It was decided that a representative sampling of USDA scientists would serve to express the needs of all the users of the Library. (It was found later that the actual distribution of NAL users was: USDA 68 percent, other US Government 14 percent, private and commercial 18 percent, which supported the original assumption.)

4,463 names were selected for the population from which to draw a sample for the Survey of USDA Research Workers. The criteria for selection was: 1. "Research" is included in the description of the Civil Service class series code. 2. The worker's division or section was designated by his agency as primarily for research. 3. Grades GS-7 and above. Two questionnaires were sent to these research workers and the results are found elsewhere in this report.

The first questionnaire was to collect information on how scientists keep informed in research progress in their respective scientific fields. Fields of interest and age of scientific material was also to be collected through responses on a Specialty List, enclosed with the questionnaire. This list was used by the National Science Foundation in maintaining the National Register of Scientific and Technical Personnel.

The second questionnaire was to assess the role that libraries, especially the NAL and USDA field libraries, do or should play in getting information to scientists. The two questionnaires were mailed in September 1962.

To backtrack in the task force events, by the middle of July it was determined that the Systems Requirements Group would require many months to finish its assignments and it was not feasible to continue the Systems Design Group. The members of the task force were reassigned, some of them returning to their agency with the understanding that they could be called back when they could be of assistance. All but two of those who returned to their agency were later utilized as needed.

Three one-half day training sessions were held to give task force and Library staff members training in Logic-flow charting. This combines the functions of flow charting where the movement of documents is charted with the functions of the logic of computer systems analysis, to determine the decision making patterns for each processing division.

There are two kinds of decisions: 1. yes, no; 2. high, equal, low. In every job there are patterns of decision making and these must be combined with the actual flow of documents in order to make meaningful evaluations. The trouble with just flow charting is that it tells only what happens, but seldom tells why some action is taken. Through Logic-flow charting, the work-flow-logic patterns are documented in such a way that in the future, systems analysts and programmers will not have to cover the same ground.



The Cost Group continued as originally planned. They have identified the costs of the NAL for fiscal years 1961 and 1962. Administrative and support costs have been applied to the working sections and costs per unit of work have been calculated.

The activities of the Task Force were temporarily suspended when the Leader was detailed to a higher priority job, and the few remaining members returned to their agency. At mid-October 1963 the Task Force Leader returned to the project. On November 1, 1963 one Task Force member was called back for five months during which time the analysis of the questionnaires was completed. The special studies, the broad systems design, and the author index problem definition were also done during this time.

The Task Force Report was presented to the Library and OMASD Administrator the last week of April 1964.

The cost of this study not including supplies, duplication or services of non-USDA members is \$52,926.17. The study was expected to utilize 84 man months of time, however only 59 man months were used. The study was expected to be completed within six months but was spread over two years.

The various parts of this report were written by different members of the Task Force. Because of this there may be some overlapping and difference in style.

#### BIBLIOGRAPHY OF AGRICULTURE - PROPOSED SYSTEM

In our proposed system, the B of A would be composed and printed from a magnetic tape using either a printer with upper and lower case letters or a photo-composition machine. The bibliographic citation would be composed as at present except that it would be typed on special paper, formatted for input to an optical scanner. In addition to the citation, the record would also carry the source and the class and the subject heading tracings used in the index. Additional tracings could also be added so that deep indexing, which would actually not be printed in the B of A, would be available for computer searching and bibliographies.

When one month's accumulation of citations were placed on magnetic tape, the citations would first be sorted by class and then alphabetized by author or other main entry. The citations and all tracings would then be numbered consecutively for printing each issue, as is done at present. Once numbered, the authors and subject headings would be written out on tapes for further sorting and printing of the author and subject indexes. All citations would be alphabetized and lines composed. Further computer processing would compose the columns for a page and the entire page would be printed at one time, producing camera copy or negative film with no stripping or other hand processing. The author and subject tracings would be sorted and pages would be produced in the same way. The printer produced pages would be photographed and reduced and plates made for photo-offset reproduction. Or film from a photo-composition machine would be used to produce plates.

This system will make it possible to issue 12 citation issues a year instead of 11 and will also make it possible to include all indexes with each issue. One will not have to wait a whole year for a subject index as at present.

Every three months, instead of printing an index to the single issue, the indexes to the previous two issues could be merged with the quarterly issue index and a cumulated quarterly index could be published. In the 12th issue, the previous three quarterly cumulations could be merged with the 10th, 11th and 12th issue indexes to publish a cumulated annual index. In other words, there would be no single issue indexes for the 3rd, 6th, 9th and 12th issues. If desired, there could be a semi-annual cumulation, but the size of these various temporary cumulations would increase the printing costs to the point where it might become uneconomical. If even the cost of printing the three quarterly cumulations was not acceptable, the first 11 monthly issues would contain their own indexes and the 12th issue would contain the annual indexes.

After an issue has been composed, the monthly index on tape would be scanned and all outstanding bibliographies would be updated. It would be more economical to do this quarterly, especially for the less urgent bibliographies.

Once this monthly processing was completed, the citations would be added serially to the bibliographic tape which would have all the citations of the previous issues of the B of A, and the subject tracings would be added to the descriptor tape. The descriptor tape, unlike the tapes used to print out the individual and cumulated index issues, would be an inverted file arrangement of individual descriptors.

Once the monthly citation issues have been printed the citation tapes could be scratched. Once the cumulated index tapes have been printed, the individual monthly index tapes could be scratched. It is recommended that the annual index cumulations be retained so that special cumulations (three year, etc.) may be produced if desired. It could be desirable also to bring out checklists and translation lists covering long periods of time.

Copies of the descriptor tape should be made available to all cooperating institutions which have computer facilities to read the tapes. This would give each institution full capabilities for making all bibliographic searches. In time, these institutions could reciprocate by providing the NAL the bibliographic citations, in machine readable text, with their accompanying indexes of all of their own publications, providing that the NAL would accept the indexing done by others. This could reduce the workload of the NAL and make it possible for the staff to add other literature which now must be omitted because of lack of funds.

It is anticipated that as the index is built up, that is, as more years of information are stored, equipment will be marketed which will make real time access practical.

It is estimated that the descriptor tape, ultimately a random file, would consist of about 30,000 records (descriptors) averaging nine characters for each descriptor. Each citation would probably be referenced to about six descriptors for machine search. With the growth of the B of A, we estimate 250,000 citations per year. Each citation address will consist of eight digits, two for volume and six for citation. The first year's cumulation of a descriptor file therefore, equals  $(30,000 \times 9)$  plus  $(250,000 \times 6 \times 8)$  or about 12 1/4 million characters of addresses.



Each year about three percent more descriptors may be added. Actually, it should level off very rapidly and the number of descriptors may never exceed 35,000. Each year 250,000 citations would be added. Again, assuming each of the citations is referenced six times, the descriptor index will grow about 12 million characters a year. Or expressed differently, there will be a fixed quantity of about 300,000 characters for the descriptors and an annual increment of 12 million characters of addresses.

It is recommended that this system be implemented one step at a time. The author index has already been started and the detail system design follows this general section. The subject index should be the next step followed by the production of the complete bibliography. Finally the special bibliographies and the information retrieval system.

#### AUTHOR INDEX - FEASIBILITY STUDY AND RECOMMENDATION FOR IMPLEMENTATION

December 1963

The preliminary tabulation and analysis of the questionnaires sent to the research scientists of the USDA indicate that the following library services are of the greatest value: 1. Recent issues of journals or periodicals; 2. Abstracting journals or services; 3. Bibliographies and reference lists.

One of the ways the NAL has of keeping these research scientists informed of pertinent journal articles is to increase the number of references in the Bibliography of Agriculture (B of A). One of the ways to increase the number of bibliographic citations with the present staff is to automate the purely clerical functions and apply the savings in man hours to increased citation production. In addition to the problem of increased production the clerk typist shortage is becoming so acute that the Civil Service Commission is going to pay transportation requests to move clerk typists to the Washington area. Of the 19 clerical positions presently authorized in the B of A section 5 are vacant, with no prospects in sight for filling. Thus the use of automation to save clerical man hours is most urgent.

It is estimated that 24,327 clerical man hours worth \$52,192.07 can be saved and reapplied to the production of 23,300 additional citations over the next three years.

Based upon the preceding reasons we recommend that the Personal Author Index of the monthly and annual issues of the Bibliography of Agriculture be automated in such a way that it will fit into the total systems concept of Information Storage and Retrieval which we are developing.

#### CALCULATION OF SAVINGS IN DOLLARS

	1964	1965	1966	Total Savings Three Years
Production Costs of Proposed System	\$ 7,831.26	\$ 10,257.05	\$ 11,060.35	
Programing Costs, \$12,000.00				
Amortized over three years	<u>4,000.00</u>	<u>4,000.00</u>	<u>4,000.00</u>	
Total Proposed System	\$ 11,831.26	\$ 14,257.05	\$ 15,060.35	
Projected Present System	<u>24,888.88</u>	<u>32,892.46</u>	<u>35,559.39</u>	
Difference in Savings	\$ 13,057.62	\$ 18,635.41	\$ 20,499.04	\$ 52,192.07

#### CALCULATION OF SAVINGS IN MAN HOURS

	1964	1965	1966	Total Savings Three Years
Man Hours Present System	8,242.1	10,891.2	11,773.8	
Man Hours Proposed System	<u>1,754.5</u>	<u>2,318.8</u>	<u>2,506.9</u>	
Difference in Savings	6,487.6	8,572.4	9,266.9	24,326.9

#### THE PRESENT MANUAL SYSTEM

One 3" by 5" slip is made for each author from each reference slip after the reference slips have been numbered. The finished author slips are proofread. Slips with errors are sent to the original typist for corrections. A new proofreading is made of all corrections. As they are read the correct author slips are placed in one pile and the corresponding reference slips are placed in a separate pile.

There are three distinct steps involved in sorting the author slips. First a clerk sorts them on the first letter of the authors last name. Second, the author slips are completely alphabetized, and third, they are checked for accuracy by a proofreader or the clerical unit supervisor.

Each of the author slips is pasted onto the Master Sheet, one on top of the other so as to expose only the top line of print containing the author's name and citation number. This process is called shingling.

Page numbers must be placed on each page and a final proof check made before the material is sent to the lending section to be microfilmed. The microfilm copy is used as a check as to what the issue contains while it is being printed and serves as a back up copy in case the master sheets should be lost or destroyed.

The master sheets are photographed, reduced and printed under a GPO contract.



When the master sheets are returned, the author slips are stripped off the master sheets and the sequence reversed (due to the fact that in the shingling process the high order slips are pasted on top of the low order slips). The slips must then be interfiled with the previous months slips to reduce the lag time in preparing the annual author index.

The author slips for the October issue are back from the printer about the same time the November author slips are ready for use. The November issue does not have an author index as this would hold up the annual author index while the November author master sheets were at the printers.

The author slips are made into piles for a given last name since there may be many citations for the same author which must be placed in citation number sequence, within author name. They are separated from the next last name by crisscrossing the piles. They may or may not be in alphabetical order for the first and second name or initials of the author for that last name.

The author slips are pasted onto long strips. Special care is taken that they are in the right order alphabetically down to the initials of the first and second names.

One or more of the indexers go over the author strips to cut out the names of identical authors to prevent repetition of the authors name for each of the citation numbers. The slips are checked alphabetically and numerically and needed corrections are sent to the typist.

The clerical unit supervisor or one of her assistants corrects all errors found by the indexers and gives the strips a final proofing before the pages are made up. After making up the author index master pages with the shingling method the page numbers are added. A final check is then made of the master sheets, after which they follow the microfilming and printing process of the monthly author index.

After printing, the master sheets are returned and checked with the printed copy. When it has been established that the master sheets no longer are needed they are destroyed.

#### THE PROPOSED SYSTEM

After the reference slips have been numbered the authors would be typed on continuous form pin feed paper on special typewriters which would become input to an optical scanner. Each line of print would be proofread by the typist before returning the carriage for the next line. If an error were found, the line delete symbol would be typed and the author typed correctly on the next line. This is expected to be the most economical way to hold the error rate down to a minimum without a complete proofreading of either the typed input or the printed computer output.

The typed author lists would be read by optical scanner and placed on magnetic tape. If the scanner is unable to recognize a character the entire line would be omitted from the magnetic tape, the line would be marked by the scanner and the page placed into a special pocket.

Those lines omitted by the scanner would be keypunched and verified, due to the possibility of unrecognizable characters in the correction batch which the optical scanner would not put on tape. The cards would be put on magnetic tape with the IBM 1401 which would also provide a method of entering corrections and emergency back up for the optical scanner.

The author records would be sorted by the IBM 7074 on name and citation number. Following the sort another 7074 program would compose the columns for the page and prepare line records. The IBM 1401 would read the line records and print the pages of camera copy on unlined paper.

The annual author index would be prepared in the same way as the monthly, after merging the eleven monthly sorted author tapes. The final merge program would provide a means of entering corrections on a replacement basis.

#### PROJECTION OF CITATION PRODUCTION

The projection of citation production is based on actual production for fiscal year 1963, actual budget projections for fiscal years 1964 and 1965, and the final goal of 200,000 citations by fiscal 1966. Calendar year figures are interpolated from the fiscal year figures as indicated by the following chart:

Actual Fiscal 1963	Actual Budget 1964	Projected Fiscal 1965	Final Goal Fiscal 1966
104,000	110,000	170,000	200,000
	Calendar 1964	Calendar 1965	Calendar 1966
	140,000	185,000	200,000

Hourly production rates for most work elements are the standards used in budgeting. Stripping and reversing, actual hours worked monthly were counted, averaged and divided into the number of slips to derive the hourly production rate. Estimated leave and holidays were subtracted from man hours per year to give an actual figure of 1750 man hours per year. This figure was then used to calculate the hourly production rates. Thus it is not necessary to make any further allowance for leave and holidays. Hourly salary rates are taken from the official salary table and are for actual personnel most nearly associated.

Some of the citations have more than one author. The 1.3 authors per citation is a well established figure used publicly and authoritatively. Charts showing the derivation of the percentage of personal and corporate authors, are available.

Printing cost is for September 1963 issue. It was \$1,689.63 for 1,595 copies, (NAL's order only, not GPO which is about 1,500 copies more). The September 1963 issue had 369 total pages.

AUTHOR INDEX PRODUCTION COSTS - PRESENT SYSTEM

Actual Cost Fiscal 1963 - 104,000 Citations - 135,200 Authors - 96.4 Percent Personal - Total 130,333

	No. of Authors	Hourly Prod.	Hours per Item	Grade &Step	Hourly Rate	Cost per Month	No. of Months	Cost per Year	Fringe Benefits 7 1/2 pct.	Total Cost per Year	Man Hours per year
Monthly:											
Typing	11,848	130	91.1	3-4	\$1.99	\$181.29	11	\$1,994.19	\$149.56	\$ 2,143.75	1002.1
Proofing	11,848	200	59.2	4-4	2.18	129.06	11	1,419.66	106.47	1,526.13	651.2
1st Sort	11,848	1400	8.5	3-4	1.99	16.92	11	186.12	13.96	200.08	93.5
Alphabetize	11,848	250	47.4	3-6	2.09	99.07	11	1,089.77	81.73	1,171.50	521.4
Shingling	11,848	100	118.5	3-7	2.15	254.78	10	2,547.80	191.09	2,738.89	1185.0
Check&Correct	11,848	450	26.3	5-7	2.66	69.96	10	699.60	52.47	752.07	263.0
Strip&Reverse	11,848	540	21.9	4-5	2.25	49.28	10	392.80	36.96	529.76	219.0
Interfile	11,848	250	47.4	3-7	2.15	101.91	11	1,121.01	84.08	1,205.09	521.4
Annually:											
CrissCross	130,333	810	160.9	5-7	2.66			427.99	32.10	460.09	160.9
Shingling	130,333	100	1303.3	3-7	2.15			2,802.10	210.16	3,012.26	1303.3
Clipping	130,333	1080	120.7	11-3	4.13			498.49	37.39	535.88	120.7
Misc.	130,333	1625	80.2	7-7	3.20			256.64	19.25	275.89	80.2
										<u>\$14,551.39</u>	6121.7
Printing of monthly and annual author pages: 325 authors per page. 802 pages at \$4.58 per page										3,673.16	
Based on 1,595 copies										<u>\$18,224.55</u>	

Projected Costs Calendar 1964 - 140,000 Citations - 182,000 Authors 96.4 percent Personal - Total 175,448

Monthly:											
Typing	15,950	130	122.7	3-4	\$2.02	\$247.85	11	\$2,726.35	\$204.48	\$ 2,930.83	1349.7
Proofing	15,950	200	79.8	4-4	2.23	177.95	11	1,957.45	146.81	2,104.26	877.8
1st Sort	15,950	1400	11.4	3-4	2.02	23.03	11	253.33	19.00	272.33	125.4
Alphabetize	15,950	250	63.8	3-6	2.12	135.26	11	1,487.86	111.59	1,599.45	701.8
Shingling	15,950	100	159.5	3-7	2.18	347.71	10	3,477.10	260.78	3,737.88	1595.0
Check&Correct	15,950	450	35.4	5-7	2.72	96.29	10	962.90	72.22	1,035.12	354.0
Strip&Reverse	15,950	540	29.5	4-5	2.30	67.85	10	678.50	50.89	729.39	295.0
Interfile	15,950	250	63.8	3-7	2.18	139.08	11	1,529.88	114.74	1,644.62	701.8
Annually:											
CrissCross	175,448	810	216.6	5-7	2.72			589.15	44.19	633.34	216.6
Shingling	175,448	100	1754.5	3-7	2.18			3,824.81	286.86	4,111.67	1754.5
Clipping	175,448	1080	162.5	11-3	4.32			702.00	52.65	754.65	162.5
Misc.	175,448	1625	108.0	7-7	3.35			361.80	27.14	388.94	108.0
										<u>\$19,942.48</u>	8242.1
Printing of monthly and annual author pages: 325 authors per page. 1080 pages at \$4.58 per page										4,946.40	
Based on 1,595 copies										<u>\$24,888.88</u>	

Projected Costs Calendar 1965 - 185,000 Citations - 240,500 Authors 96.4 Percent Personal - Total 231,842

Monthly:											
Typing	21,077	130	162.1	3-4	\$2.02	\$327.44	11	\$3,601.84	\$270.14	\$ 3,871.98	1783.1
Proofing	21,077	200	105.4	4-4	2.23	235.04	11	2,585.44	193.91	2,789.35	1159.4
1st Sort	21,077	1400	15.1	3-4	2.02	30.50	11	335.50	25.16	360.66	166.1
Alphabetize	21,077	250	84.3	3-6	2.12	178.72	11	1,965.92	147.44	2,113.36	927.3
Shingling	21,077	100	210.8	3-7	2.18	459.54	10	4,595.40	344.66	4,940.06	2108.0
Check&Correct	21,077	450	46.8	5-7	2.72	127.30	10	1,273.00	95.48	1,368.48	468.0
Strip&Reverse	21,077	540	39.0	4-5	2.30	89.70	10	897.00	67.28	964.28	390.0
Interfile	21,077	250	84.3	3-7	2.18	183.77	11	2,021.47	151.61	2,173.08	927.3
Annually:											
-CrissCross	231,842	810	286.2	5-7	2.72			778.46	58.38	836.84	286.2
Shingling	231,842	100	2318.4	3-7	2.18			5,054.11	379.06	5,433.17	2318.4
Clipping	231,842	1080	214.7	11-3	4.32			927.50	69.56	997.06	214.7
Misc.	231,842	1625	142.7	7-7	3.35			478.05	35.85	513.90	142.7
										<u>\$26,352.22</u>	10,891.2
Printing of monthly and annual author pages: 325 authors per page. 1428 pages at \$4.58 per page										6,540.24	
Based on 1,595 copies										<u>\$32,892.46</u>	



**AUTHOR INDEX PRODUCTION COSTS - PRESENT SYSTEM**

Projected Costs Calendar 1966 - 200,000 Citations - 260,000 Authors 96.4 Percent Personal - Total 250,640

	No. of Authors	Hourly Prod.	Hours per Item	Grade &Step	Hourly Rate	Cost per Month	No. of Months	Cost per Year	Fringe Benefits 7 1/2 pct.	Total Cost per Year	Man Hours per year
Monthly:											
Typing	22,785	130	175.3	3-4	\$2.02	\$354.11	11	\$3,895.21	\$292.14	\$ 4,187.35	1928.3
Proofing	22,785	200	113.9	4-4	2.23	254.00	11	2,794.00	209.55	3,003.55	1252.9
1st Sort	22,785	1400	16.3	3-4	2.02	32.93	11	362.23	27.17	389.40	179.3
Alphabetize	22,785	250	91.1	3-6	2.12	193.13	11	2,124.43	159.33	2,283.76	1002.1
Shingling	22,785	100	227.9	3-7	2.18	496.82	10	4,968.20	372.62	5,340.82	2279.0
Check&Correct	22,785	450	50.6	5-7	2.72	137.63	10	1,376.30	103.22	1,479.52	506.0
Strip&Reverse	22,785	540	42.2	4-5	2.30	97.06	10	970.60	72.80	1,043.40	422.0
Interfile	22,785	250	91.1	3-7	2.18	198.60	11	2,184.60	163.85	2,348.45	1002.1

Annually:											
CrissCross	250,640	810	309.4	5-7	2.72			84.157	63.12	904.69	309.4
Shingling	250,640	100	2,506.4	3-7	2.18			5,463.95	409.80	5,873.75	2506.4
Clipping	250,640	1080	232.1	11-3	4.32			1,002.67	72.20	1,077.87	232.1
Misc.	250,640	1625	154.2	7-7	3.35			516.57	38.74	555.31	154.2
										<u>\$28,487.87</u>	<u>11,773.8</u>

Printing of monthly and annual author pages: 325 authors per page. 1544 pages at \$4.58 per page

Based on 1,595 copies

TOTAL COST

7,071.52

\$35,559.39

**AUTHOR INDEX PRODUCTION COSTS - PROPOSED SYSTEM**

Projected Costs Calendar 1964 - 140,000 Citations - 182,000 Authors 96.4 Percent Personal - Total 175,448

Monthly:											
Typing&Typist	15,950	100	159.50	3-4	\$2.02	\$322.19	11	\$3,544.09	\$265.81	\$3,809.90	1,754.5
Proofing											
Scanner Operator	15,950	6365	2.51		2.33	5.85	11	64.35	4.83	69.18	
Scanner Machine	15,950	6365	2.51		24.80	62.25	11	684.75		684.75	
Keypunch&Verify											
Unreadable Lines	55					5.50	11	60.50		60.50	
1401 Card to Tape	55		.05		65.00	3.25	11	35.75		35.75	
7074 Sort	15,950		.10		154.00	15.40	11	169.40		169.40	
7074 Form Lines	15,950		.06		154.00	9.24	11	101.64		101.64	
1401 Print Pages	15,950		.14		65.00	9.10	11	100.10		100.10	

Annually:											
7074 Merge A.	175,448		.14		154.00			21.56		21.56	
7074 Merge B.	175,448		.07		154.00			10.78		10.78	
7074 Form Lines	175,448		.33		154.00			50.82		50.82	
1401 Print Pages	175,448		.86		65.00			55.90		55.90	
										<u>\$5,170.28</u>	<u>1,754.5</u>

Printing of monthly and annual author pages: 581 pages at \$4.58 per page based on 1595 copies

TOTAL COST

2,660.98

\$7,831.26

Projected Costs Calendar 1965 - 185,000 Citations - 240,500 Authors 96.4 Percent Personal - Total 231,842

Monthly:											
Typist&Typist	21,077	100	210.77	3-4	\$ 2.02	\$425.76	11	\$4,683.36	\$351.25	\$5,034.61	2,318.8
Proofing											
Scanner Operator	21,077	6365	3.31		2.33	7.71	11	84.81	6.36	91.17	
Scanner Machine	21,077	6365	3.31		24.80	82.09	11	902.99		902.99	
Keypunch&Verify											
Unreadable Lines	73					7.30	11	80.30		80.30	
1401 Card to Tape	73		.05		65.00	3.25	11	35.75		35.75	
7074 Sort	21,077		.11		154.00	16.94	11	186.34		186.34	
7074 Form Lines	21,077		.07		154.00	10.78	11	118.58		118.58	
1401 Print Pages	21,077		.17		65.00	11.05	11	121.55		121.55	

Annually:											
7074 Merge A.	231,842		.15		154.00			23.10		23.10	
7074 Merge B.	231,842		.08		154.00			12.32		12.32	
7074 Form Lines	231,842		.42		154.00			64.68		64.68	
1401 Print Pages	231,842		1.12		65.00			72.80		72.80	
										<u>\$ 6,744.19</u>	<u>2,318.8</u>

Printing of monthly and annual author pages: 767 pages at \$4.58 per page based on 1595 copies

TOTAL COST

3,512.86

\$10,257.05

AUTHOR INDEX PRODUCTION COSTS - PROPOSED SYSTEM

Projected Costs Calendar 1966 - 200,000 Citations - 260,000 Authors 96.4 Percent Personal - Total 250,640

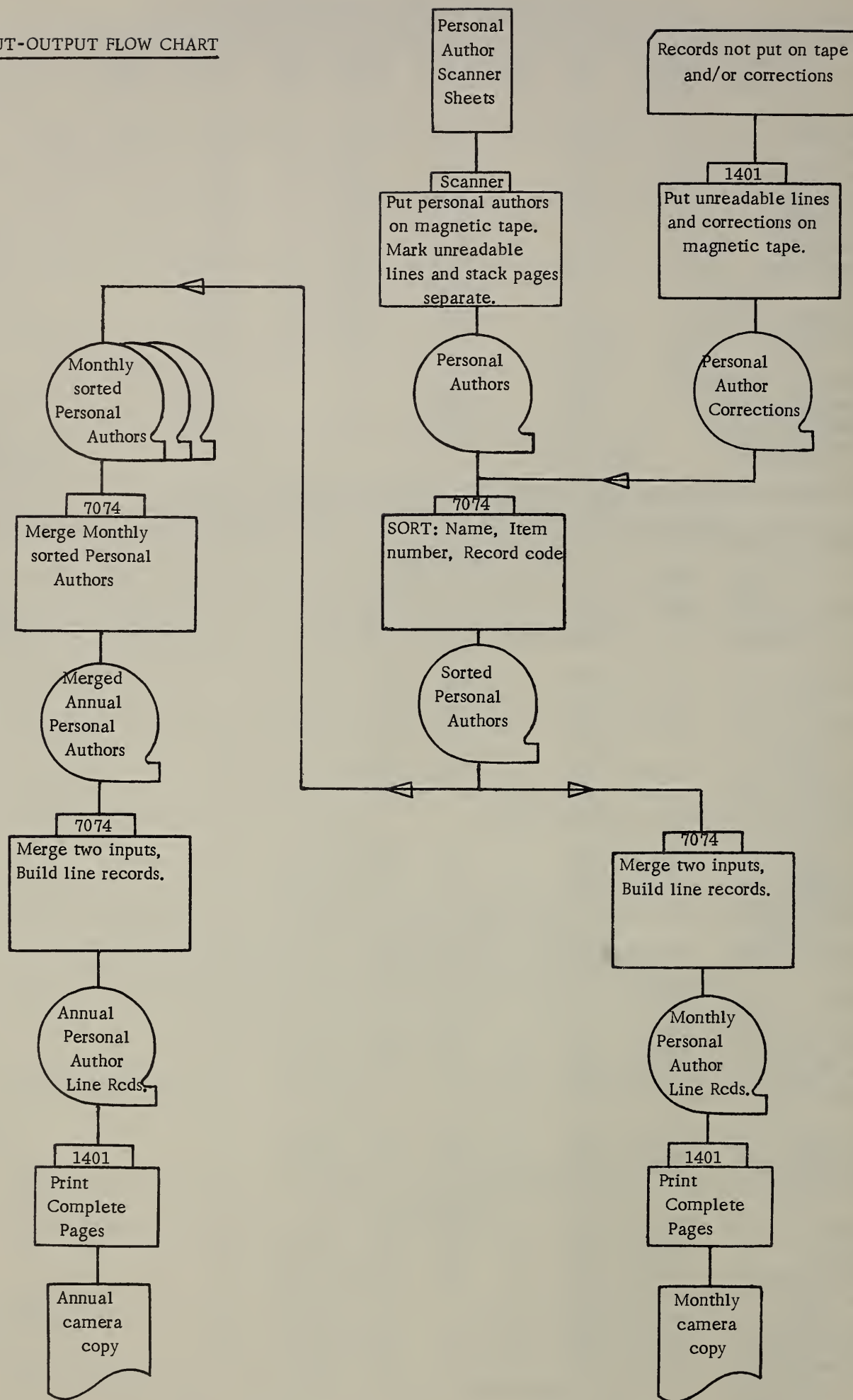
	No. of Authors	Hourly Prod.	Hours per Item	Grade & Step	Hourly Rate	Cost per Month	No. of Months	Cost per Year	Fringe Benefits	Total Cost per Year	Man Hours per year
Monthly:											
Typing&Typist	22,785	100	227.85	3-4	\$ 2.02	\$460.26	11	\$5,062.86	\$379.71	\$5,442.57	2,506.9
Proofing											
Scanner Operator	22,785	6365	3.58		2.33	8.34	11	91.74	6.88	98.62	
Scanner Machine	22,785	6365	3.58		24.80	88.78	11	976.58		976.58	
Keypunch&Verify											
Unreadable Lines	79					7.90	11	86.90		86.90	
1401 Card to Tape	79		.05		65.00	3.25	11	35.75		35.75	
7074 Sort	22,785		.11		154.00	16.94	11	186.34		186.34	
7074 Form Lines	22,785		.07		154.00	10.78	11	118.58		118.58	
1401 Print Pages	22,785		.18		65.00	11.70	11	128.70		128.70	
Annually:											
7074 Merge A.	250,640		.15		154.00			23.10		23.10	
7074 Merge B.	250,640		.09		154.00			13.86		13.86	
7074 Form Lines	250,640		.45		154.00			69.30		69.30	
1401 Print Pages	250,640		1.21		65.00			78.65		78.65	
										\$ 7,258.95	2,506.9
Printing of monthly and annual author pages: 830 pages at \$4.58 per page based on 1595 copies										3,801.40	
TOTAL COST										\$11,060.35	

CALCULATION OF RUNNING TIME - PROPOSED AUTHOR INDEX

IBM TABLE X22-6785-3 IBM 7074 with 729IV TAPES

Calendar 1964													
Run No.	File Name	Char. per Record	No. of Records	Char. per Block	Rcds. per Block	No. of Blocks	Minutes per 100 Blocks	Minutes per File	Chan- nel	Min. Lib. & LBLCK	Minutes per Run	Hours per Run	Runs per Year
IIA													
	Merge Output	40	175,448	2,000	50	3,509	.0655	2.298	0&1	6.0	8.298	.13830	1
IIB													
	Merge Output	40	175,448	2,000	50	3,509	.0655	2.298	0&1	2.0	4.298	.07163	1
IIIA													
	Merged Rcds., Input	40	15,950	2,000	50	319	.0655	.209	0				
	Print Lines, Output	135	3,190	1,350	10	319	.0481	.153	1				
Estimated Process Time at .1 minutes per thousand authors								1.600		2.0	3.600	.06000	11
IIIB													
	Merged Rcds., Input	40	175,448	2,000	50	3,509	.0655	2.298	0				
	Print Lines, Output	135	29,242	1,350	10	2,925	.0481	1.406	1				
Estimated Process Time at .1 minutes per thousand authors								17.540		2.0	19.54	.32567	1
Calendar 1965													
IIA													
	Merge Output	40	231,842	2,000	50	4,637	.0655	3.037	0&1	6.0	9.037	.15062	1
IIB													
	Merge Output	40	231,842	2,000	50	4,637	.0655	3.037	0&1	2.0	5.037	.08395	1
IIIA													
	Merged Rcds., Input	40	21,077	2,000	50	422	.0655	.276	0				
	Print Lines, Output	135	4,216	1,350	10	422	.0481	.203	1				
Estimated Process Time at .1 minutes per thousand authors								2.108		2.0	4.108	.06847	11
IIIB													
	Merged Rcds., Input	40	231,842	2,000	50	4,637	.0655	3.037	0				
	Print Lines, Output	135	38,641	1,350	10	3,862	.0481	1.858	1				
Estimated Process Time at .1 minutes per thousand authors								23.18		2.0	25.18	.41967	1
Calendar 1966													
IIA													
	Merge Output	40	250,640	2,000	50	5,013	.0655	3.284	0&1	6.0	9.284	.15473	1
IIB-Merge Output													
	IIB-Merge Output	40	250,640	2,000	50	5,013	.0655	3.284	0&1	2.0	5.284	.08807	1
IIIA Merged Rcds, Input													
	IIIA Merged Rcds, Input	40	22,785	2,000	50	456	.0655	.299	0				
	Print Lines, Output	135	4,557	1,350	10	456	.0481	.219	1				
Estimated Process Time at .1 minutes per thousand authors								2.279		2.0	4.279	.07132	11
IIIB Merged Rcds, Input													
	IIIB Merged Rcds, Input	40	250,640	2,000	50	5,013	.0655	3.284	0				
	Print Lines Output	135	41,774	1,350	10	4,178	.0481	2.010	1				
Estimated Process Time at .1 minutes per thousand authors								25.064		2.0	27.064	.45107	1

# SYSTEM INPUT-OUTPUT FLOW CHART





Sample input to  
optical scanner  
(shortened from  
11 inches long)

051475 BRANDLY C A  
051477 BROWNLOW W J  
051477 DEDEAUX J D  
051478 BUBIEN Z  
051478 MIEDZOBRODZKI K  
051479 BUHNER F  
051482 CARLSSON F  
051483 CATSOGRIDAKIS C A  
051486 COWIE A T  
051487 CULZONI V  
049406 LUDERS W  
049411 BUNTING A H  
049412 EVANS S A  
052188 HILL F W  
049188 GARRETT J C  
049189 GENDERS R  
049190 GERLING J  
049191 GODDARD J H  
049191 JONES E M  
049192 GORITZ H H J  
049193 GRABE A V  
049194 GRAVES H A  
049194 HOAG D G  
  
049204 HORLICK J  
049205 HUCKINS R K  
049206 INDYK H W  
049207 IWASE K  
049208 JAIN H K  
049209 JENSEN E R  
049209 DEMONSABERT C J  
049209 LAIR J  
049209 TOWNSEND C VF  
049209 TOWNSEND C B  
049210 JOHANSSON G  
049211 KNAYZEV A A  
049212 KONISHI Y  
049213 KOTZ J  
049114+  
049214 KURIAN K C  
049215 LAGERQUIST C  
~~049216~~ LANGVAD B

Next page is  
a sample page  
from the printed  
Bibliography of  
Agriculture

ITEM	ITEM	ITEM	ITEM	ITEM
HAMBECK V 76337	HARTMAN P A 72282	HEIM R 70201	HILOEBRANOT R 75284	HOLMSGAARD E-CONT 71243
HAMILTON A L 71626	HARTMANN F K 68371	HEIM W 76280	HILGEN O 76280	HOLOPAINEN V 70971
HAMILTON O W 73259	HARTOG C O 76855	HEINER H 74497	HILGENBRANO L E 75803	HOLOVASKY J 69366
HAMILTON H G 76691	HARTOG C OEN 68372	HEINIG H 72200	HILF H H 70909	HOLSTENER 71136
HAMILTON J W 75073	HARTSOOK E W 72523	HEINRICHS O H 69535	HILKENBOUMER F 69692	JORGENSEN H 70469
HAMILTON K C 70050	HARTT C E 75838	HEINZ S K 69857	HILL E B 76282	HOLSTENER-JORGENSEN H 74141
HAMILTON M S M 71484	HARTWIG E E 69613	HEINY S K 73520	HILL H 72839	HOLSTUN J T 75110
HAMILTON P B 69211	HARVEY H L 69616	HEINZE H 70361	HILL J M 69220	HOLYNSKA M 68830
HAMM R 75138	HARVEY I M 75636	HEJE K K 76906	HILL K W 68824	HOLZ W 70108
HAMMER W 75395	HARVEY L H 69477	HELDENBERGH M 72201	HILLIARD J R 73850	HOLZAPFEL A 74826
HAMMONO O 76446	HARVEY R 74943	HELLBERG A 71627	HILLS C H 72931	HOLZBERLEIN J W 73376
HAMMONO P B 72194	HARVEY W R 71978	HELLBERG N 73145	HILLS G L 76772	HOLZER K 71244
HAMMONS O R 72333	HARZER E 72198	HELLEA A 76281	HILLYARD T N 73373	HOLZINGER O 76144
HAMMER C E 72704	HASEBA T 68077	HELLENURME V 70288	HILSE G 74374	HOLZ J 74320
HAMNER K C 68811	HASEGAWA K 76222	HELLER C L 75768	HILTON J L 70106	HOMAYOUN O 76488
HAMPSON J W 75682	HASEGAWA N 76326	HELLESANO J 74890	HILU H M 68145	HOMUTESCHU V 68831
HANAN J J 70246	HASHIMOTO T 68816	HELLINGA G 71135	HIMMEL U 74209	HOMUTESCU V 70550
HANAUSEK E 71303	HASKELL E E 70247	HELLMER S B 68144	HINOERY G A 68146	HONG C 76609
HANOA K L 75679	HASKELL H M 71456	HELLMESJO B 76693	HINER R L 68106	HONORE E N 70109
HANOOO O N 67902	HASLAM R J 68188	HELLMICH W B 73082	HINKLE O A 71082	HONSEL P VAN 75239
HANOSCHACK W 68812	HASLER A 68817	HELLMICH W B 68273	HINTZ H F 73637	HOOF MELVAARS 76773
HANOTY C F 76391	HASMAN M 68898	HELY P C 73083	HINTZ H F 72043	MRS M J T 68145
HANES T L 68393	HASPRAY J 75397	HEMMING F W 69218	HINZE G 75402	HOOKER A L 76409
HANGER B C 68025	HASSAN Z 69215	HEMMING M A 73953	HINZE G O 69412	HOLRNWEG J 76738
HANISCH K H 69672	HASSELBACH VON 76692	HEMMEL R V 70730	HIRANO K 68147	HOOS S 75405
HANKIN M E 76854	HASSELBACH VON 68818	HEMMEL H 74221	HIRATA T 76608	HOPKINS D E 74051
HANLEY F 69533	HASSELBACH VON 75014	HENDONERSON J R 72336	HIRSCH G P 74383	HOPKINS O F 72623
HANNA W J 68813	HASTINGS W H 71547	HENDONERSON M C 68652	HIRSCHFELDER H 76487	HOPKINS G H E 71423
HANNESTAD E 69841	HASVOLO K K 71547	HENDONERSON M T 73560	HIRSCHMAN A O 73710	HOPKINS W C 75017
HANRAHAN F P 74917	HASZEL O L 71520	HENORICH S J 73203	HIRVONEN-SEM8 A 69845	HOPPER V 75547
HANSARO S L 72840	HATA K 74791	HENORICH S J 72598	HISAUCHI K 67707	HOPWOOD M L 71926
HANSEL R 69212	HATA S 69216	HENORICH S J 74257	HISINGER C 72339	MORA F B 76956
HANSEL W 72284	HATCH C 72393	HENORICH S J 68161	HITTE C N 70837	HORATSCHEK E 76221
HANSEN C M 72069	HATCH E O 67832	HENORICH S J 68821	HIVON K J 75694	HORIE T 72857
HANSEN E 68814	HATCH R E 76404	HENORICH S J 74383	HIX S M 68825	MORIE Y 73458
HANSEN H K O 72195	HATFIELD E E 72791	HENRI C R 76995	HJALMARSSON B 75989	MORIKAWA Y 67835
HANSEN J H 72850	HATHAWAY O E 75988	HENIN S 70248	HJELM L 76141	MORIUCHI T 72530
HANSEN M A 72196	HATHERLY O 74944	HENKEL A 70285	HJELMQVIST H 69400	HORN A G 71487
HANSEN R 68815	HATHMAN M 68230	HENKEL H G 70105	HJERPE C A 72972	HORN O H S 71513
HANSEN S E 68271	HATTEMER H H 70200	HENLEY O 76020	HOBBERGER A 74770	HORNE B S 75019
HANSLIK G 70115	HATTINGH H S 70115	HENNIG K 74596	HOBBS C O 68148	HORNE M K 75100
HANSON A A 71367	HATTORI B 68026	HENNINGER H 68018	HOBBS C S 71923	HORNWEG J 76464
HANSON A G 68773	HAUAS S 68773	HENNOCK R L 68849	HOCHEREAU M T 76908	HORSCH F 71803
HANSON H C 74334	HAUCK R O 70857	HENRICK C A 72337	HOOGES E F 75015	HORT I 71189
HANSON J B 68773	HAUFE W O 73478	HENRIKSSON A 68027	HOOGES E F 70124	HORTLING V 70977
HANSON L A 74334	HAUKE R L 68446	HENRIKSSON K 72209	HOOGES J 76406	HORTON O B 74052
HANSON W C 69125	HAUPT R 72454	HENRY J W 69843	HOOGES R E 74382	HORVATH E 72206
HANSSON A 73367	HAUS J B 73080	HENRY T W 72511	HOOGES T K 68826	HORVATH GY 72974
HANSSON J E 70908	HAUS T E 69612	HENTGES J F 71628	HOOGSON G L 70107	HORVATH L 68029
HANWAY J J 68691	HAUSCHILDO I 74700	HENZELL E F 71990	HOOGSON J F 72771	HORVATH M 69317
HANQUE I 70287	HAUSER O C 73755	HEPLER P R 69947	HOOGSON L 68730	MOSE R 72932
HARA H 67831	HAUSKNOT M 73128	HEPLER P R 69947	HOOGSON R H 68774	MOSKINS F H 72840
HARADA T 77079	HAVLIK B 72199	HEPLER P R 69947	HOOGSON T 75638	HOSSLIN R VON 68832
HARBORNE J B 69213	HAWK H W 72199	HEPLER P R 69947	HOEKSTRA W G 72914	HOTCHKISS A T 68473
HARBUTT P R 69214	HAWKES A O 67833	HEPLER P R 69947	HOEL P 73375	HOTOPELEANU I 71473
HARDENBURG R E 72392	HAWKINS B S 69478	HEPLER P R 69947	HOEN P C A T 76521	HOUCK J P 75695
HARDING J A 75286	HAWKINS C J 72887	HEPLER P R 69947	HOFFER H 74771	HOUGH L F 69731
HARDING J J 69955	HAWKINS W W 72824	HEPLER P R 69947	HOFFMAN G 70949	HOURLAN G A 74949
HARDING R B 75546	HAXHI S 72036	HERBER F 73194	HOFFMAN G J 77071	HOUSE H L 73638
HARDING H J 68707	HAYASHI J 76278	HERBST W 74435	HOFFMAN H 70468	HOWING P A N 76489
HAREL E 75637	HAYASHI Y 68467	HEROER R J 75401	HOFFMAN H H 75016	HOVELAND C S 69540
HARGROVE B 69264	HAYES B N 68373	HERKLOTS G A C 71242	HOFFMAN L 67786	HOW R B 75314
HARKNESS R O 76550	HAYES O N 71988	HERMANN R K 71890	HOFFMAN R L 75904	HOWARD A P 68488
HARKNESS C 76277	HAYES K M 73081	HERMANN H F 71025	HOFFMAN R L 73521	HOWARD D A 72838
HARMAN T W 73811	HAYES W J 73149	HERMANSEN N K 71026	HOFFMANN C E 68827	HOWARD H W 69971
HARMAT MRS A 76891	HAYS K L 72311	HERMANSEN S R 71920	HOFFMANN D 71304	HOWARTH W O 67709
HARMON S A 69970	HEAD H H 72311	HERNANDEZ GAYA S 74597	HOFFMANN F G 71444	HOWE G R 71927
HARMS J 70856	HEAD K W 77085	HERNANDEZ GAYA S 70548	HOFFMANN G 70403	HOWITT B M A 67787
HARMSSEN H E 68970	HEADY E O 76115	HEROERO J 71921	HOFFMANN M 70516	HOWITT R C L 67787
HARMSWORTH L J 69586	HEALE J B 69217	HERROLO J 73372	HOFFMANN W 72973	HOWLAND H C 68474
HARPER O 71485	HEALY A J 70104	HERR L 68823	HOFLER K 76984	HOWLAND J E 75946
HARPER G A 69475	HEANEY I H 72930	HERREGOOS H 75313	HOFFMANN E 70403	HOWSE G 73305
HARPER H J 70546	HEARD T G 69399	HERREGOOS E O 74701	HOFFMANN F 76407	HOY J M 73195
HARPER J B 75896	HEASLEY O K 76605	HERRERA COMPI J A 68028	HOFFMANN F 71355	HOYT H H 72306
HARPER M J K 72741	HEATH A 71718	HERRERA PEREZ G 69536	HOFFMANN G 68828	HUOKA F 71928
HARPER W J 74768	HEATH O F 73064	HERRICK J B 76946	HOGE H 69744	HRYN A L 73940
HARRACH W G 76604	HEATH M E 72002	HERSCU O 71473	HOGG M L 71999	HSIA C F 70728
HARRAR J G 76184	HEATH O V S 68735	HERSCU O 71473	HOGUND C R 74258	HSIEH C C 75917
HARRELL O C 69476	HEBERDAY R F 77007	HERSCU O 71473	HOGUE O E 69537	HSIU S T 72841
HARRESCHOU F 74394	HEBERT C N 72862	HERSCU O 71473	HOLDER F W 72737	HSUEH C H 75917
HARRINGTON B J 74169	HEBERT T T 69421	HERSCU O 71473	HOLBER S H 73813	HU C L 69479
HARRINGTON O 73024	HEBRON V 76054	HERSCU O 71473	HOLBERNESS J 73636	HUANG C F 70728
HARRINGTON T A 71525	HECHT E I 68143	HERSCU O 71473	HOLDSWORTH M 68472	HUANG S M 71390
HARRIS C I 70102	HECHT H 75399	HERSCU O 71473	HOLE N H 75356	HUANG T C 67847
HARRIS C R 73079	HECHT S L 74022	HERSCU O 71473	HOLFELDER E 69743	HUANG W Y 69333
HARRIS E H 75630	HECHT S L 74022	HERSCU O 71473	HOLKE R 76407	HUBACEK V 69787
HARRIS G K 69535	HECHT S L 74022	HERSCU O 71473	HOLLAND E T 74974	HUBBELL C H 75018
HARRIS H B 68168	HECHT S L 74022	HERSCU O 71473	HOLLER H 72839	HUBBERT F 72046
HARRIS J F 71512	HECHT S L 74022	HERSCU O 71473	HOLLIDAY J W 73936	HUBBLE O R 72548
HARRIS J Y 74930	HECHT S L 74022	HERSCU O 71473	HOLLIS B 74480	HUBER F 73865
HARRIS L E 72188	HECHT S L 74022	HERSCU O 71473	HOLLIS J P 68319	HUBERT K 68030
HARRIS M 76486	HECHT S L 74022	HERSCU O 71473	HOLLISTER K W 72641	HUBERT P 70635
HARRIS M R 68140	HECHT S L 74022	HERSCU O 71473	HOLLO J 74500	HUBL E 68833
HARRIS P H 72742	HECHT S L 74022	HERSCU O 71473	HOLLON B F 72203	HUDSON O W 72207
HARRIS R R 71986	HECHT S L 74022	HERSCU O 71473	HOLLOWAY R C 72548	HUDSON O E 69973
HARRIS W G 71455	HECHT S L 74022	HERSCU O 71473	HOLM H 76143	HUDSON J F 75078
HARRISON C W 76905	HECHT S L 74022	HERSCU O 71473	HOLMBERG O 72745	HUDSON J H 69847
HARRY E 72620	HECHT S L 74022	HERSCU O 71473	HOLMES J H 71486	HUDSON J R 72208
HART G M 69842	HECHT S L 74022	HERSCU O 71473	HOLMES J J 71697	HUESPETH E B 69498
HART J 69398	HECHT S L 74022	HERSCU O 71473	HOLMES J W H 72205	HUBNER F R 75486
HART J A 72197	HECHT S L 74022	HERSCU O 71473	HOLMES W 71648	HUELIN F E 75315
HART S A 70886	HECHT S L 74022	HERSCU O 71473	HOLMOY R 74058	HUERTA CRESPO J 71578
HARTE F J 72040	HECHT S L 74022	HERSCU O 71473	HOLMQVIST A H 67708	HUET R 69975
HARTEL K 68141	HECHT S L 74022	HERSCU O 71473	HOLMQVIST N 76408	HUGEL M F 73358
HARTL H 74699	HECHT S L 74022	HERSCU O 71473	HOLMSGAARD E 71136	HUGHES B O 71137
HARTLEY H 75396	HECHT S L 74022	HERSCU O 71473		
HARTLEY J H 77080	HECHT S L 74022	HERSCU O 71473		
HARTLEY W J 72836	HECHT S L 74022	HERSCU O 71473		
HARTMAN J O 74364	HECHT S L 74022	HERSCU O 71473		



An automated Monthly index to the Bibliography of Agriculture can be produced with annual accumulations at about the same cost as the present manual annual index. This index can be introduced with a very short lead time and does not require major retraining of the present indexing staff. A taxonomic and geographic index can also be provided with no added effort or time. Further mechanization may be introduced gradually after this step, until the goal of full automation is attained. No part of this plan requires change-over on broad fronts before operations may begin.

The computer system for the indexing function of the Bibliography will accommodate itself to the present indexing, which uses the prior indexes as an authority. Eventually a formal authority should be established, but it is not necessary to delay automating the monthly subject index while an authority is prepared. The single citation entry practice will continue, arranged as now by broad subject classifications. These classifications are each structured by subdivisions to four levels. Distribution of citations into these subordinated categories is what determines the physical arrangement of the publication.

The form of the monthly index will resemble the present annual subject index which consists of conventional indexing terms, e.g. "Forests--Ecology--Study and teaching"; "DDT--Insect resistance--Czechoslovakia". However, these indexing terms and the subordinated parts which comprise them are created by a method wholly unlike the assignment of subject headings from an authority list by a cataloger who works with a traditional system.

The indexer will work on an "indexing continuum", the first segment of which has positions with a fixed relationship to each other, while the second part has free-floating and permutable positions. The indexer can manipulate these latter as necessary to bring out whatever aspects of his subject matter seem desirable, or he can indicate his desire for the computer to permute on an equal basis all of the terms of the indexing continuum. The continuum may be illustrated thus:

1, 2, 3/4, 5, 6 or E, PF/4, 5, 6

The first three positions (which are referred to as "left of the slash") represent the classifications with fixed subordinations that place a citation in its designated position within the body of the Bibliography of Agriculture. While these are also indexing functions, they do not assign any terms which appear as such in the monthly index. These listings appear in the front of the monthly issue and form as now a "Table of Contents". Actually, this table of contents is really a classified index affording an approach for broad subject-scanners. The present coding method may be used which is indicated by letters. If a new entry is wanted it may be inserted by using the numbers to indicate the proper place. A combination of letters and numbers could also be used.

The positions on the indexing continuum to the right of the slash, form the monthly index and its cumulations. While to the user's eye the form of this index is identical with conventional indexing terms, he is really looking at the product of controlled permutations of terms, or pre-coordinated terms. These terms were assigned by the indexer much as uniterms or descriptors are assigned in a true coordinate indexing system. It is the computer which combines the individual terms according to instructions furnished to the program by the indexer. The process may best be followed through illustration. The citation itself is the starting point:

GREENE, J. T., and CARMON, J. L. Variation  
of tracheid length in clonal lines of short  
leaf pine . . .

The indexer will first determine where the citation belongs left of the slash. This places it properly in the body of the Bibliography, where it falls alphabetically by author in the assigned classification. For the sample citation this is "Forestry--Management and Finance--Regeneration and Breeding. The present coding is:

G - FORESTRY  
FMF - FOREST MANAGEMENT AND FINANCE  
Regen - Regeneration and Breeding

This can then be coded: G, FMF, REGEN/

If standard codes had not already been established, the indexer could make the following notes on his worksheet: 1, Forestry; 2, Forest Management and Finance; 3, Regeneration and Breeding. He would have coded the portion to the left of the slash 1, 2, 3/

The actual indexing begins beyond the slash. The system using the coded information to the left of the slash would not be used in the production system until the complete citation is used as input to the computer, but is included here as an indication of how the automation of the monthly subject index will fit into the total system.

With the citation given, an indexer has assigned the following terms, under which the citation will be subject indexed:

Pinus echinata--Genetics  
Pinus echinata--Wood  
Wood--Tracheids

In preparing this for the computer, the indexer would have filled out the worksheet thus: 4, Pinus echinata; 5, Genetics; 6, Wood; 7, Tracheids. This completes the basic statement, e.g. 1, 2, 3/4, 5, 6, 7. To permute the terms in order to generate the desired terms, the indexer will instruct the program what is to be done with the elements on the indexing continuum. The headings used for the present manual system are made with these instructions: 4-5, 4-6, 6-7. This is not a full use of the

computer potential. The new index is proposed with a taxonomic and a geographic index. To indicate these, an asterisk (\*) is prefixed to the posting position whenever a taxonomic term is assigned. The "posting position" is the first position, or first number, of any permutation instruction. If the posting position is a geographic name, a pound sign (#) is prefixed. These signs instruct the computer to place such permutations in the appropriate separate table, keeping them out of the subject index alphabet.

An indexer oriented to research requirements or having special subject knowledge can exploit the depth of a citation fully using this program. For example using the same citation as before, the following subject indexing terms can be called for:

Asexual reproduction--Pinus echinata  
Clones--Pinus echinata  
Wood and Bark--Structure--Pinus echinata  
Pinus echinata--Asexual reproduction  
Pinus echinata--Tracheids

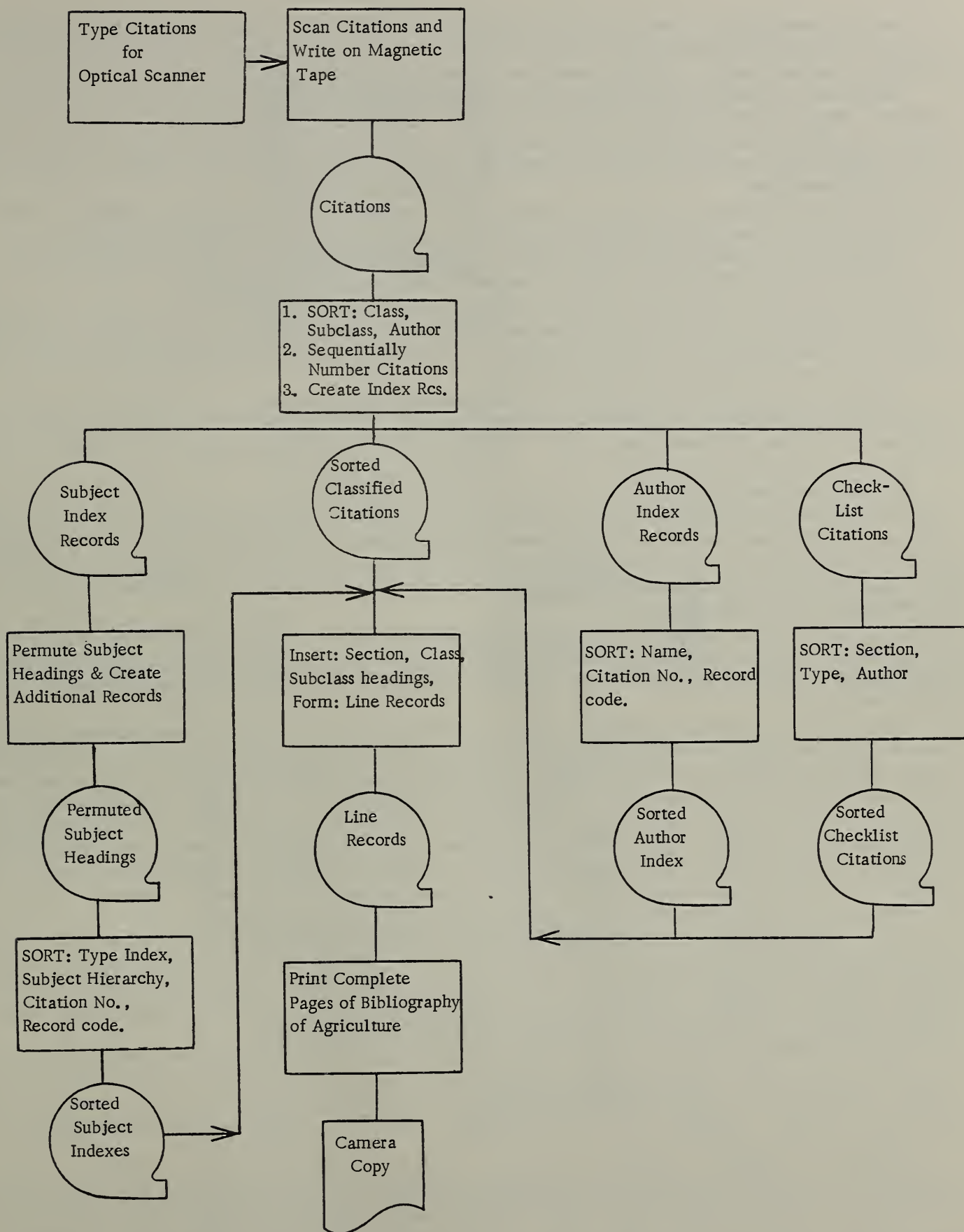
In this instance, the indexing continuum has been expanded to: 1, 2, 3/4, 5, 6, 7, 8, 9. Also, the headings with the species name will be transported to the taxonomic index. Assignments are: 4, Asexual reproduction; 5, Clones; 6, Wood and Bark; 7, Structure; 8, Tracheids; 9, Pinus echinata. The permuting instructions read: 4-9, 5-9, 6-7-9, \*9-4, \*9-8. Where 9 is in the posting position it has been asterisked, thus generating an entry for the taxonomic index.

This is the essence and substance of the program. Its application is not limited to the subject index. SEE references may be handled in the same manner eliminating the necessity for much computer sorting and merging. For instance, in the above, a reference is required from Short-leaf pine to the Linnean name. This can well be written as 10. Since any given SEE reference is required but once in an issue, duplications can be avoided by the computer program.

Another refinement of the program makes possible the use of what might be called "automatically expandable subject headings" --for want of a good analogy in conventional practice. The monthly indexes will be cumulated annually, or perhaps more often. While the sort for a given monthly index may not place more than three or four citation numbers under a given term, the annual cumulation might build up twenty-five citations at the same point; a 5 year cumulation 125. Accordingly, more specific entry will be desirable. This circumstance might be called for with the more general indexing terms, such as "Forests", "Labor", etc. It should not be employed for specifics, which ought always be given fullest possible entry, even if there is only one citation. In any event, if this device should appear desirable at some point, the convention for it could be: 6-4-\$7. This means "print 6-7 and, if the number of citations is greater than x, print 6-4-7". X is an arbitrary cut-in, determined editorially. If the indexer has not provided a term to divide subject headings with more than x, the computer would print out the subject headings and their citation numbers. These could then be expanded to eliminate excessive citation numbers under any one subject heading.

If an authority is developed it would also have predetermined permutation patterns, thus the indexer would have even less coding. Terms which are to be assigned for machine searching, but not printed, could be processed within this system by merely omitting permutation instructions for those terms. All the terms assigned can be searched in the conventional coordinate method.





## ACQUISITIONS

The NAL manual system for ordering and other acquisition work makes efficient use of the photoclerk. By photographically copying the bibliographic information, not only is much transcribing avoided, but potential errors are greatly reduced. Once the item is received, however, an official record must be made and often this largely identical with the ordering record.

Furthermore, the manual system requires filing the order information in a number of places: Numerical order file, alphabetic order file, obligation copy to Budget and Finance, and so on. Stripping these files when the order is received or cancelled is also a chore. Checking for status of order cannot be done regularly and follow-ups are done only on request. In Budget and Finance, obligations must be posted and manually balanced. Similarly, payments made must be posted and the items pulled from the obligations sheet.

Much of this bookkeeping can be done automatically by the computer if the order is machine processed. In addition, the checking for items on order and the preparation of the necessary visible records can all be machine generated.

The following is not meant to be a specific system for processing acquisitions, but is rather a suggested approach. A detailed study of NAL needs would be necessary for the specific design of an acquisition system.

Present selection methods would be continued using the photoclerk to make the initial record. After search and verification that the item is to be acquired and after the vendor or source has been recorded and price indicated, the information is given to an acquisitions clerk. The order is prepared on a document writer which simultaneously types the order, prepares a 3 x 5 carbon copy and punches the computer input cards.

The carbon copy goes into the catalog as an on-order item. This is pulled when the catalog cards are filed. The check-list of punched cards representing the order has a duplicate first card. This duplicated first card carries the order number and about 50 characters of the main entry and title. This duplicate card is kept in an alphabetic file to be used to identify items received without an order number.

The rest of the punched cards are fed into the computer which adds each record in numeric sequence to the order tape, posts the obligation to the obligation tape, and posts the order summary to the appropriate vendor. If it is to be an acquisition by exchange or gift, the records instead of being posted to the obligations and vendor tapes, will be posted to the appropriate gifts and exchanges tapes. A serial order will also be posted in the serials records, but will be marked as an "on order" item.

After posting, the punched cards will be dropped into a tub file in numeric sequence. If the item ordered is a serial, the cards will go into the serial tub file.

A variation of this ordering system is shown on the second ordering chart. In the second proposed system, the temporary catalog card and the actual order to the vendor are produced from the computer. This reduces the typing requirements since the vendor information is pulled from the vendor tape. The only keypunching required is the bibliographic information and the vendor code.

When an item is received, the alphabetic duplicate card and the numeric cards are pulled. The numeric cards accompany the item through processing. The alphabetic duplicate card has punched into it a received signal as well as the essential invoice information (price, date, shipping charges). The duplicate card is fed into the computer and then is sent on with the invoice to Budget and Finance after the received item has been accepted. In the computer, the item is pulled from the order tape and written onto the in-process tape. When Budget and Finance is ready to pay the invoice, a payment card is punched and it and the duplicate card are fed into the computer. The obligation record is reduced, the received item is pulled from the vendor tape and posted to a payment record. A notification is printed or punched out to Treasury to write the necessary check. (The specific record requirements are, no doubt, set forth by GAO in order to preserve an audit trail. These, of course, will be incorporated in the system. These records can be all computer generated.)

If an exchange item is received, the card pulling remains the same, but instead of changing the obligation and vendor tapes, it is the exchange and gift tape that is updated in that the "on-order" portion of the record is changed to "received".

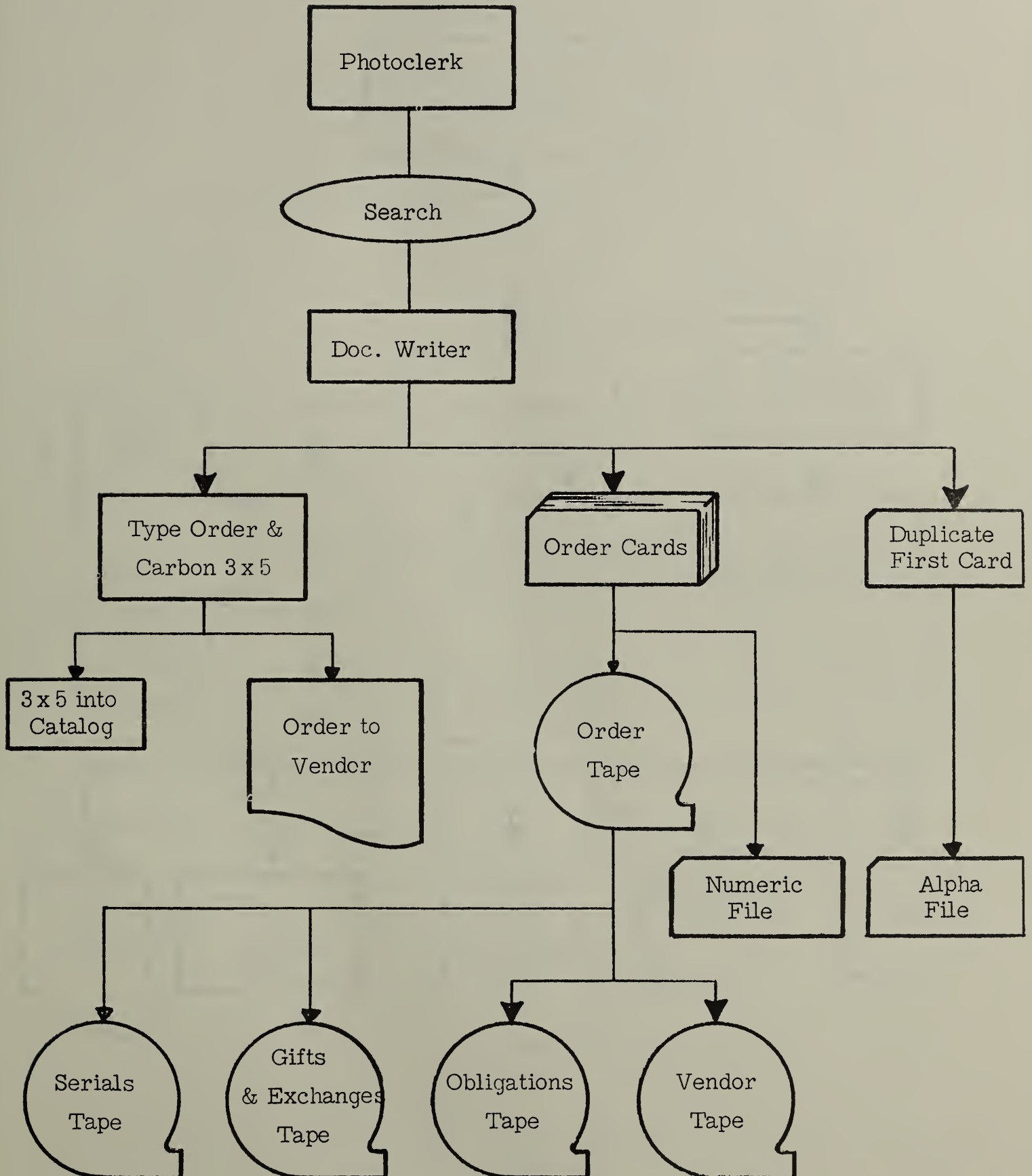
Listings can be run periodically from the in-process tape so that library users can know what is available. Status of processing is thus always known. The vendor tape can supply the information on the orders held by each vendor. The numeric tape or tub file of numeric cards is convenient for checking any specific order.

Instead of a separate in-process tape, the Library may prefer to have a combined on-order and process tape. In that case, rather than having a straight numeric sequence, an adaptation of the Luhn numbering system as used in KWIC could be employed. This arranges the items in alphabetic order and also provides a unique number for each order. Another way would be to have an alphabetic tape in addition to the numeric tape. This, however, would require an additional tape read using the alphabetic duplicate cards.

Periodically, the alphabetic duplicate cards are sorted into numeric sequence, the serials cards pulled, and the rest matched in the collator with the numeric cards. Cards that do not match are pulled and the status of the items verified. This is simply a double check on the system and a technique for removing any cards that might have been overlooked.

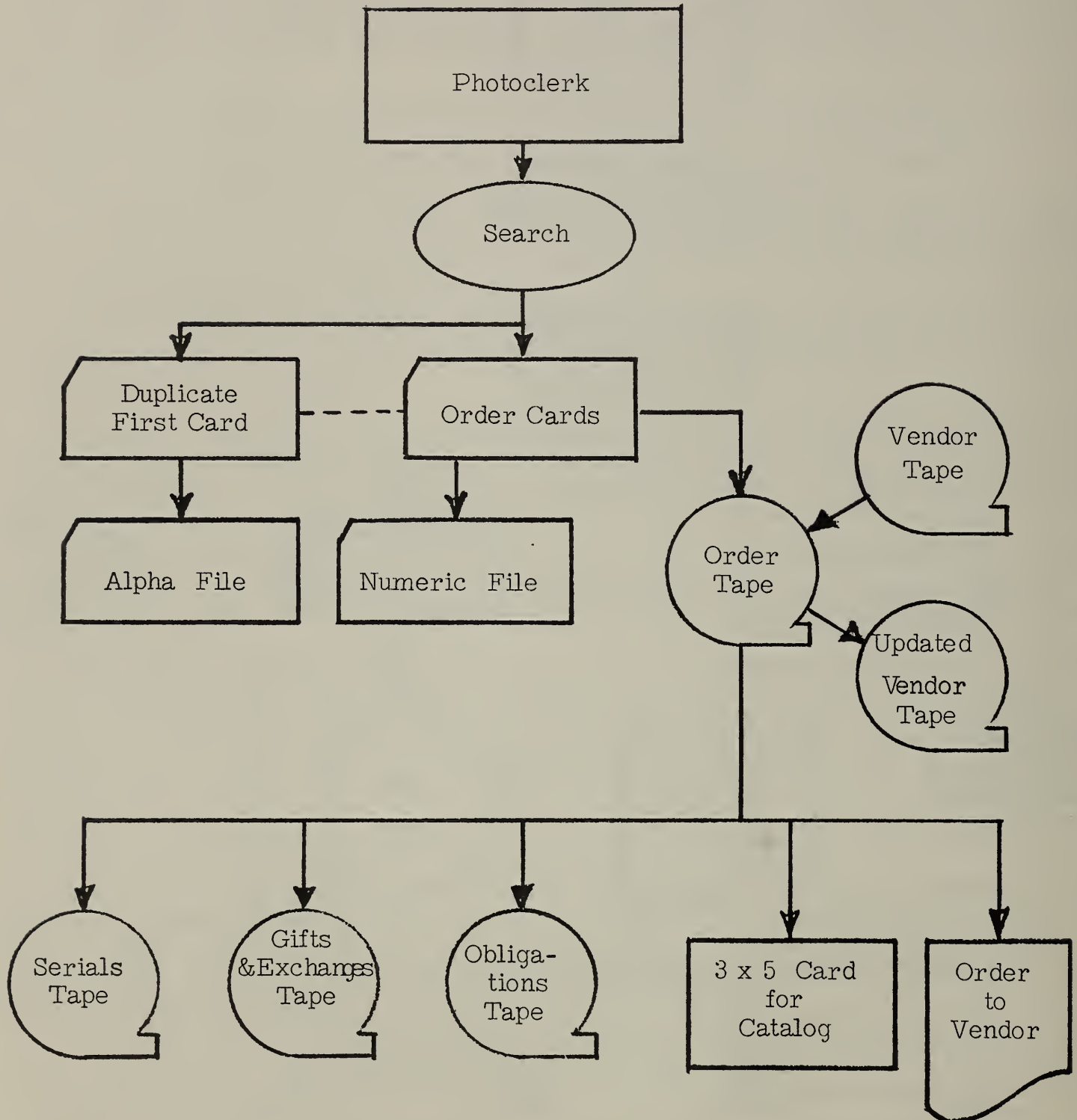
Priority and special handling items can, of course, be flagged; requestors notified of received items; follow-ups prepared automatically after an expiration date; and any other controls exercised which are deemed necessary.

# ORDERING



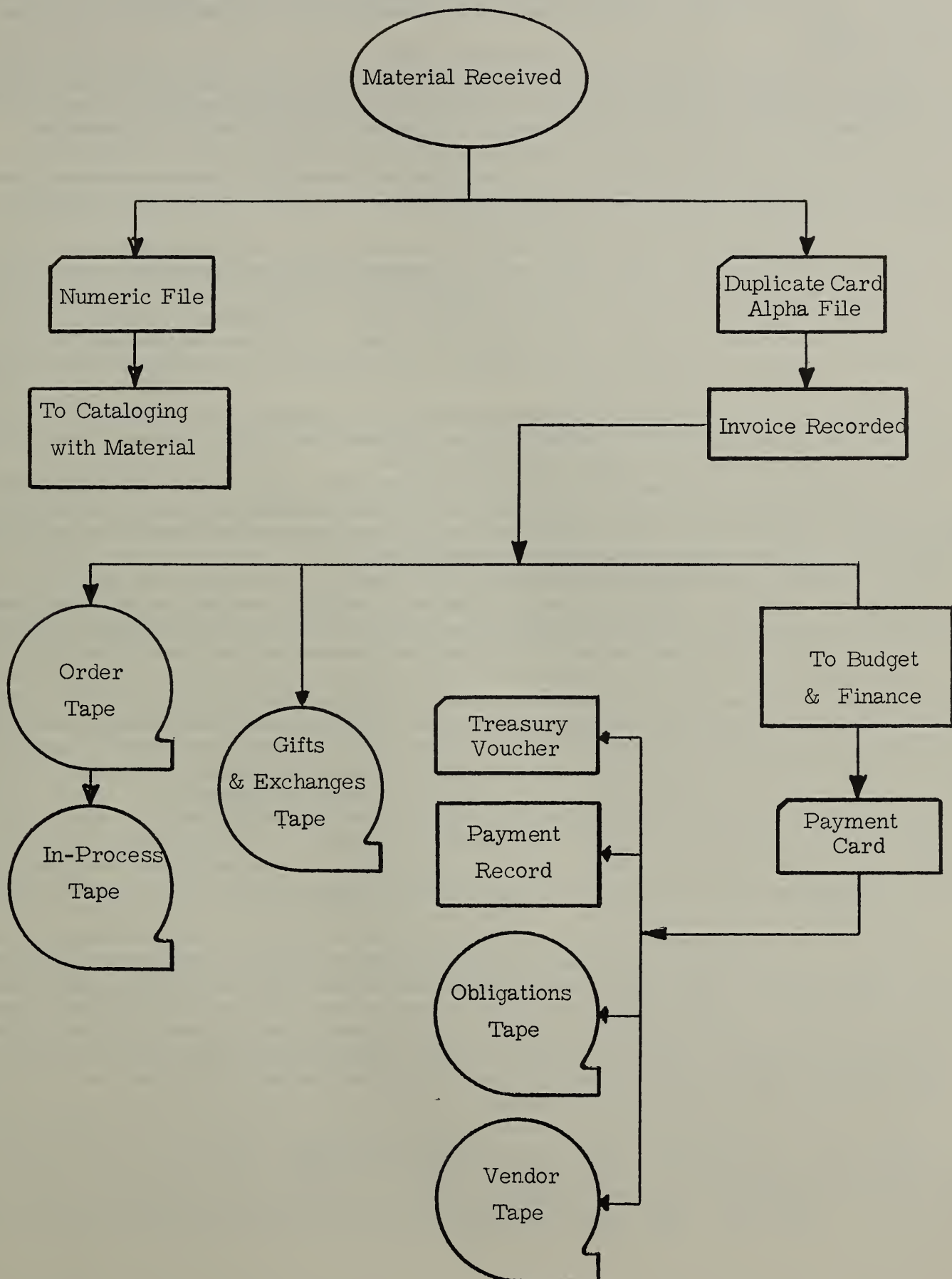


ORDERING  
(ALTERNATE SYSTEM)





# RECEIVING



The NAL, through purchase, gift and exchange, receives over 19,000 different serial titles annually. Through cooperation with the land-grant libraries, NAL will be receiving bibliographic information on additional serials. As the library is nationally responsible for the bibliographic control of agriculture publications, the maintaining of serial records is one of the main elements of this control. The B of A, however, cites only a small proportion, probably not more than one quarter, of the journals received by the Library.

Although the Library has a good manual system for checking in serials, it has no ready facility for listing its holdings or printing current lists of journals. New serial titles included in the B of A are listed in the individual issues of the B of A, but cumulations are not published, the list is not complete, nor is it economic to issue special compilations, by subject category for example, of serial titles. It would be desirable, therefore, if the serial record could be stored in a computer which would permit compilation of serial lists in any way desired.

In addition to preparing the desired serial lists, a computer system would also be able to do much of the internal serial processing such as preparing the necessary claims for missing issues and indexes, printing the binding slips, periodically issuing status reports for irregular serials and renewing subscriptions.

In the past, a computer based system for a large collection of serials such as NAL's had to be kept on magnetic tape and processing had to be on a batch basis. Random inquiry could not be accepted. The only way to provide quick status information on a specific title or issue was to have the computer periodically print out listings of the current holdings. Although, such printed lists have the virtue of making the serial records widely available, it is nevertheless not a desirable system, for the information is never completely up to date. Also, for large serial holdings, it is expensive and awkward to use. It is our recommendation, therefore, that the serials records be kept in a random access file. This will permit random posting and real time inquiry as to status of any item in the file.

When a serial is received, a prepunched card, previously prepared by the computer, is pulled from a tub file. If it is a regularly dated issue, the date will already be punched in the card. If it is not, the date will be entered in the card. The card will update the computer record and a double routing slip printed out.

The tub file of prepunched interpreted cards may be prepared monthly by the computer for the issues to be received in the following month. Irregular issues will have a card punched out for the next issue whenever an issue is recorded. It might be practical to have all cards for a year punched at one time. Since this would require the storage of a large number of cards, it may be advisable to keep the card punching on a monthly basis.

For serials on order, a copy of the punched order card (see section on Acquisitions) will be in the tub file. When a new serial is received, this card will, in addition to providing the input for the checking-in procedure, also trigger the necessary cataloging and financial transactions and write the new serials tape. Printed from this tape is the monthly new serials title list.

If a serial is received for which there is no card in the tub file, then it represents an unsolicited acquisition which first must be reviewed before being accepted by the Library.

Since some journal titles are very long and exceed the capacity of a single card, it would be necessary to have trailer cards if the full title is used. Using the journal abbreviation, however, a trailer card should never be necessary. It should be pointed out that the sample serial records shown in this section include only the abbreviated B of A form of the journal title. No provision is made for the full title. If a full title is deemed necessary as is used in the listing of New Periodicals and Serials, then this will have to be included in the original random access record or on a separate tape.

The routing slip can be printed out at the time the issue is received. It would probably be better, however, to have the computer pre-print the routing slips at the time the check-in cards are made or on a scheduled monthly basis. Routing information could thus be efficiently stored on tape. Since monthly updating is, no doubt, sufficient for routing records, the updating and printing could be done simultaneously. The slips are printed in pairs, one to serve as the actual routing slip and the other to be the circulation control record.

When a new volume number is recorded, the computer will print out the status of the previous volume and the binding instructions. This status slip will be notification to the binding clerks to assemble the volume for binding and serve also as the actual binding slip. It may even be practical to program the computer to print out a binding slip when all issues and indexes of a volume have been received. This will depend on how well the librarian can anticipate the publishing program of each journal. In any event, an alert when a volume changes number will materially assist the binding clerks in their work. When the binding slip is prepared, a binding card will also be punched. The binding clerks will drop this card into the tub file when the binding is sent out. This will serve as the input record when the bound volume is received.

A serial record could look something like the following:

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
01782 Amer. Forests	12	3	1262	04123	8817	BL	1000	02	AB	ENG
1-8, M9-10, 11-67, B68 69/0301 0302 0403										
(12)	(13)	(12)	(14)	(15)	(16)					



(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
46422	Lavourea	6	IR	0000	76882	0000	00	7642	01	A POR
	52-63		64/01-02,		03-04,					
	(12)		(15)		(16)					

- (1) Journal number - 5 digit number, equally distributed over present holdings.
- (2) Frequency
- (3) Date due
- (4) Expiration date, month and year
- (5) Vendor code - 4 digits (Purchased journals are identified by language, not country of origin. If a geographic code is desired, this number can be expanded.)  
Exchange Code - 5 digits, the first two signifying geographic area.
- (6) Binding color and material, 0000 means not bound.
- (7) Lettering color
- (8) Price or exchange material
- (9) Number of copies
- (10) Location - standard letter symbols used by NAL
- (11) Language
- (12) Volumes in library
- (13) M Volumes missing
- (14) B Volume at bindery
- (15) / current volume
- (16) Issues received day and month (Can have multiple records for multiple copies.)
- (17) No item 17 is shown on the sample records, but it may be advisable to include a signal for those journals which are to be reviewed for the B of A.

Only journal title abbreviation is shown. If full title is needed, it may be kept here or on a separate tape.

The serial identification number (item 1 on the serial record) is shown as a 5 digit number. Distributed evenly over the present holdings, this would allow for normal expansion, assuming that the present large holdings will give a good alphabetic spread. However, to be on the safe side, it would probably be advisable to allow larger gaps between numbers. A 6 digit number would allow a gap of about 50 vacancies between assignments. An alpha-numeric scheme, where the alphabetic character corresponds to the initial letter of the first word of the title followed by 5 digits would allow, on an average, 100 vacancies between assignments. If copy number is to be shown in the serial identification number, then two additional digits should be added. These terminal digits are to be dropped or ignored when processing for serial titles.

The records up to the language designation are fixed field records and therefore can be readily extracted and acted on as needed. The information which will be printed in serial lists, etc., follows the fixed field records up to the slash / the current volume. If a union list of serials is issued which will include the holdings of other institutions, then the name of the institution can follow the last volume designation. (The slash does not print; it is used as a stop signal.) In addition to the journal title, a record would print items 11 through 14 plus name of institution holding the title. It may be desirable to edit out the B (item 14) for volumes at the bindery.

With an average record length of 150 characters and spaces and allowing for 20,000 records, the total serial file will probably equal about 3 million characters. This figure includes about 100,000 characters for the necessary SEE references for journals which have changed title.

There would be a separate vendor tape arranged by vendor number, giving his name and address and listing the journals (code number and quantity) he supplies and the price of each.

There would also be a separate exchange and gift tape arranged by exchange code number. This number could be made meaningful by having the first two digits signify the geographic breakdown used by the Library.

The serial file will be read periodically -- once a week or twice a month -- and all claims for missing issues written on a work tape. The claims will be sorted into vendor sequence and then matched with the vendor tape to print out the actual claims. Since the vendor address is printed on the form, the latter need only be folded with address out or slipped into a window envelope for mailing. At the time the claim is prepared, a punched card will also be prepared for the checking-in tub file for each issue claimed. This will replace the regular check-in card and will thus be a flag that a claim has been made and will show the date of the claim. In order to prevent multiple claims for the same issue, the work claim tape will be kept for matching with the next claim tape and all duplicates cancelled. It will probably not be necessary to keep a record for possible follow-up or second claims, because during the regular read of the file, a follow-up claim can be prepared for all items which have exceeded a certain time span. If a follow-up record is desired, then the duplicates which have been found when the two succeeding claim tapes have been matched, can be written on a third tape. Periodically this can be read against the total file to pull out all items received and follow-up claims written for the remainder.

There are several ways of determining if an issue is considered missing and a claim should be prepared:

1. Claim when an issue is skipped.
2. Claim when an issue is not received by a fixed date Item 3 on the sample serial record, shows that the journal Amer. Forests should be received by the 3rd of the month (date of issue). If this date has been exceeded, a claim is written.
3. Claim by formula based on interval between receipt of previous issues. The computer calculates the average interval between previous receipts of a title. To this added a small factor to allow for holidays, longer months and other possible delays. During the claim read cycle, this interval number is added to the last date and if the total is less than the current date, then a claim is written.
4. Irregular serials would be written out quarterly or annually for review. This write-out may be limited to titles not received during the previous quarter or year.

During the claim read cycle the computer will also be scanning for expirations and will write out renewals. Similarly, and at the same time, the exchanges can be monitored and non-productive exchanges properly flagged.

## CIRCULATION

The present circulation methods used by the Library are very simple and efficient. Only a minimal record is kept. Overdues take about 2-1/2 hours a week and there does not seem to be any great need for keeping detailed records by borrower. Book cards are not used and every effort is made to have the borrower make out the request or transaction card.

A computer program could prepare book cards, prepare borrowers' lists, and send out overdues. Tighter controls and statistical information could be provided. The computer system would, however, be more expensive. It is our recommendation, therefore, that circulation be continued as at present, to be reviewed at a later date after the more urgent problems have been worked out.

If, however, greater circulation control is needed, a very simple, but effective circulation system can be designed. Essentially, an extra card is made during the cataloging process. This has the call number, plus the first few words of the main entry. Room is left on this card to record borrower and date. When the book is loaned, the borrower signs the card. Daily, the borrower identification and date are punched into the cards and the cards read into the computer. If the number of outstanding loans are not too large, a single tape record arranged by borrower is sufficient. If the outstanding loans are very extensive, it would probably be advisable also to have an item record, that is, a file arranged by call number. If very rapid access to this record is needed, it should be in a random access file.

As the loan is recorded, a new book card is punched by the computer. This new card and the old book card are returned to the loan desk where they are filed by call number. When the book is returned, the new card is slipped into the book and the old card is returned to the computer to clear the record. The cards at the loan desk are also used to identify where a charged-out item is located.

From the borrowers' tape are prepared overdues and termination notices. The returned cards can furnish the necessary circulation statistics.

## CATALOGING

A fully mechanized catalog can offer many aids to the cataloger. Much of the look-up verification that the cataloger presently does to check author entries, book numbers, forms of corporate entries, tracings for previous editions, establishment of added copies and a host of other detail verifications that involve checking the shelf list and author entries, can readily be done by the computer. These all presuppose, however, that a complete shelf list, and author and subject catalogs are stored in the computer. There are, however, other tasks in which the computer can assist the cataloger from the beginning. These include the actual printing of catalog cards and book catalogs, and the editing and printing of subject authority lists and corporate headings.

If there is to be coordination between the B of A and book cataloging, one of the first tasks should be the establishment of a uniform subject heading list. As the B of A indexes are built up, the computer will be storing all the tracings. These can be listed without the citation addresses and serve as the subject heading authority list. The SEE and SEE ALSO references can be inverted by the computer to produce all the refer froms. In addition, the computer will record the frequencies with which each entry is used, giving the cataloger a measure of usage and providing an editing control for the assignment of headings.

Authority lists can be printed out at any time and the "chains" or linkages between headings printed separately. Records are kept automatically showing which headings are searched by the library clientele and which are ignored. Tighter control of headings, the carrying of less deadwood and the guarantee that all referrals lead to actual entries and not into blind alleys are all made possible.



An authority list of corporate entries can also be maintained on tape which will include all variants of a corporate body as SEE references. The machine will be programmed to accept only recorded entries and to reject any new corporate entry until it has been formally recorded. Similarly, the machine will reject any duplicated shelf list number.

With a computer, cataloging will proceed much as at present. The incoming item with the acquisition punched cards and, if desired, a printout of these cards will be given to the descriptive cataloger who will edit the original acquisition record. Classification and Cutter numbers will be applied and the material given to the subject catalogers. The assumption is that the subject cataloging and the B of A indexing will be identical. If it isn't, double handling, as at present, may be necessary. As noted in the section on the B of A, in addition to the regular tracings, additional descriptors may be added to provide for deep indexing. These descriptors will not be printed in the catalog or B of A index, but they can be searched in the computer for reference, and bibliographic work.

Once the catalogers have completed their work, the item will be entered on the bibliographic tape as a B of A citation and purged from the in-process tape. The title will also be entered on a catalog tape where, in addition to the bare citation, a full entry, including all the information normally carried on the shelf list and the main entry, will be provided. From this will be printed the catalog cards and/or book catalog and, if desired, an accession list.

The basic elements which go to make up a catalog card will be identified. These include such catalog card elements as the main entry, title, additional authors (including editor, translator, compiler, etc.), place, publisher, date, language, collation and notes. This bibliographic string need not have each specific element identified but only the class or type of element. The purpose of this identification is to control the printing format and edit the output and is not meant to be a descriptor. For example, these identifications can be used if a requestor specifies that he wishes references only of a certain date or only in certain languages. The system should not be over-designed in order to provide uncalled-for services which increase input costs without commensurate utility.

The catalog tape could be in shelf list order, the shelf list number serving as the unique address of the title. Or it could be in main entry order. Updating these tapes, however, involves more effort than using a purely sequential number such as the B of A citation number. It may be preferable, therefore, to use the B of A number as the storage address. Assuming that the B of A sequence is considered the main entry or catalog tape, then the other tapes: Shelf list, author, subject heading and, if desired, title and part title, will individually carry the file entry, that is, the shelf list number, or author, or subject heading, or title, etc., and the address, B of A number, only. The full entry will appear only on the catalog tape.

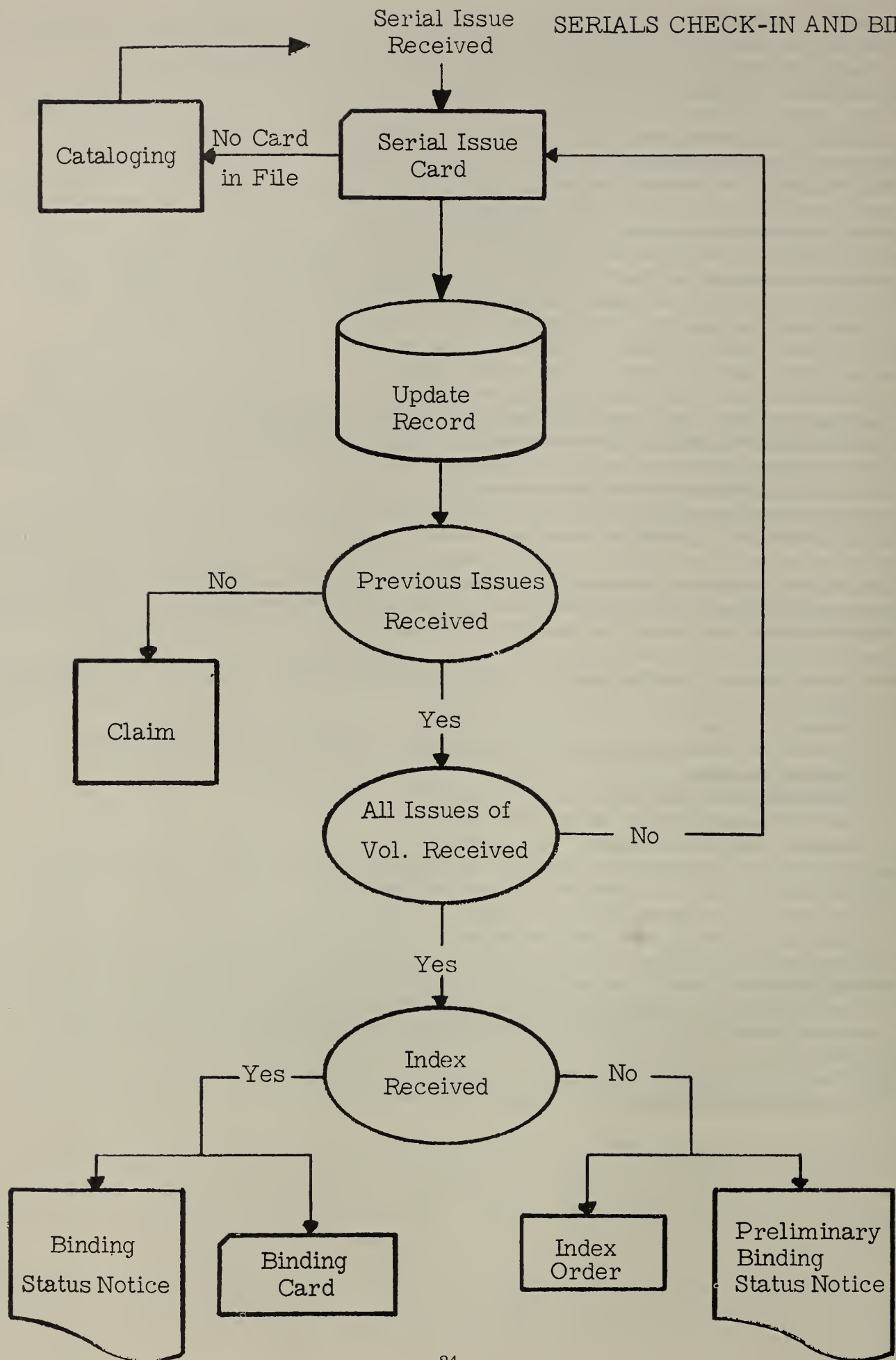
The computer offers a large variety of outputs from the same bibliographic record. From the entries stored, one can produce:

1. Standard catalog cards
2. Standard book catalog with separate sections for author, subject heading, book number and title
3. Permuted title index
4. Permuted subject heading index
5. Combined permuted title and subject heading index
6. Descriptor tapes or Uniterm cards.

Rather than making any a priori decisions, it would be advisable first to make only catalog cards and produce, experimentally, a variety of outputs to be tested with the Library staff and clientele. The main thing is that the bibliographic record be recorded in its entirety and in open language as it is now on the printed catalog card. Whatever future decisions are made as to the arrangement or use of this information, the record will never have to be transcribed again.

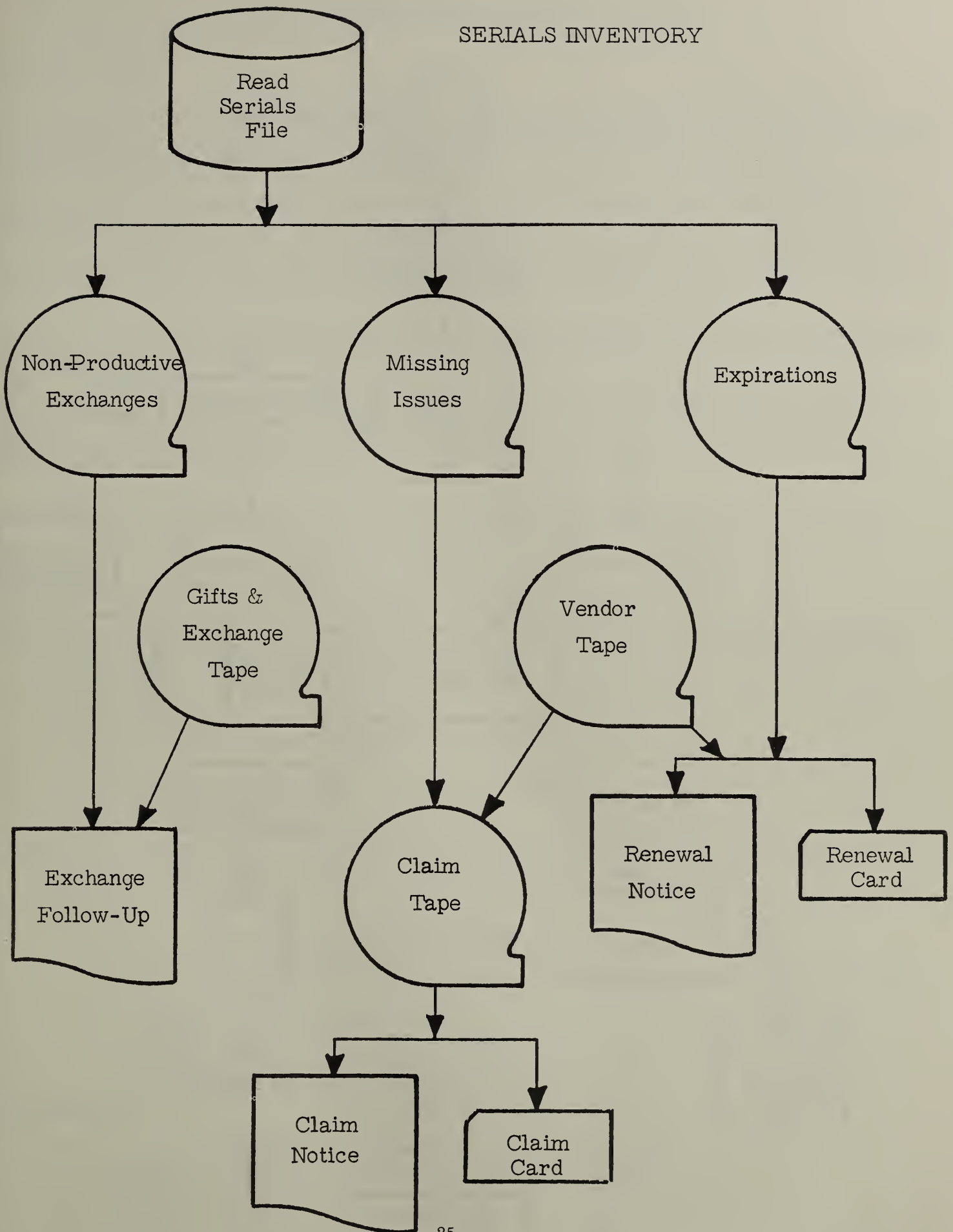
A computer catalog also simplifies the problem of location control or shelving. Large libraries today find it difficult to maintain their collection by strictly class arrangement. More and more it is becoming necessary to keep portions of the collection in storage facilities and to shelve tight. Where parts of the collection have to be removed from their regular position and stored elsewhere, it is very simple to change the record--a single gang punch in the original punched cards will usually suffice.

Purging, weeding and updating are also simplified. All records of an item can be expurgated or changed without the laborious task of trying to trace each entry in the catalog.

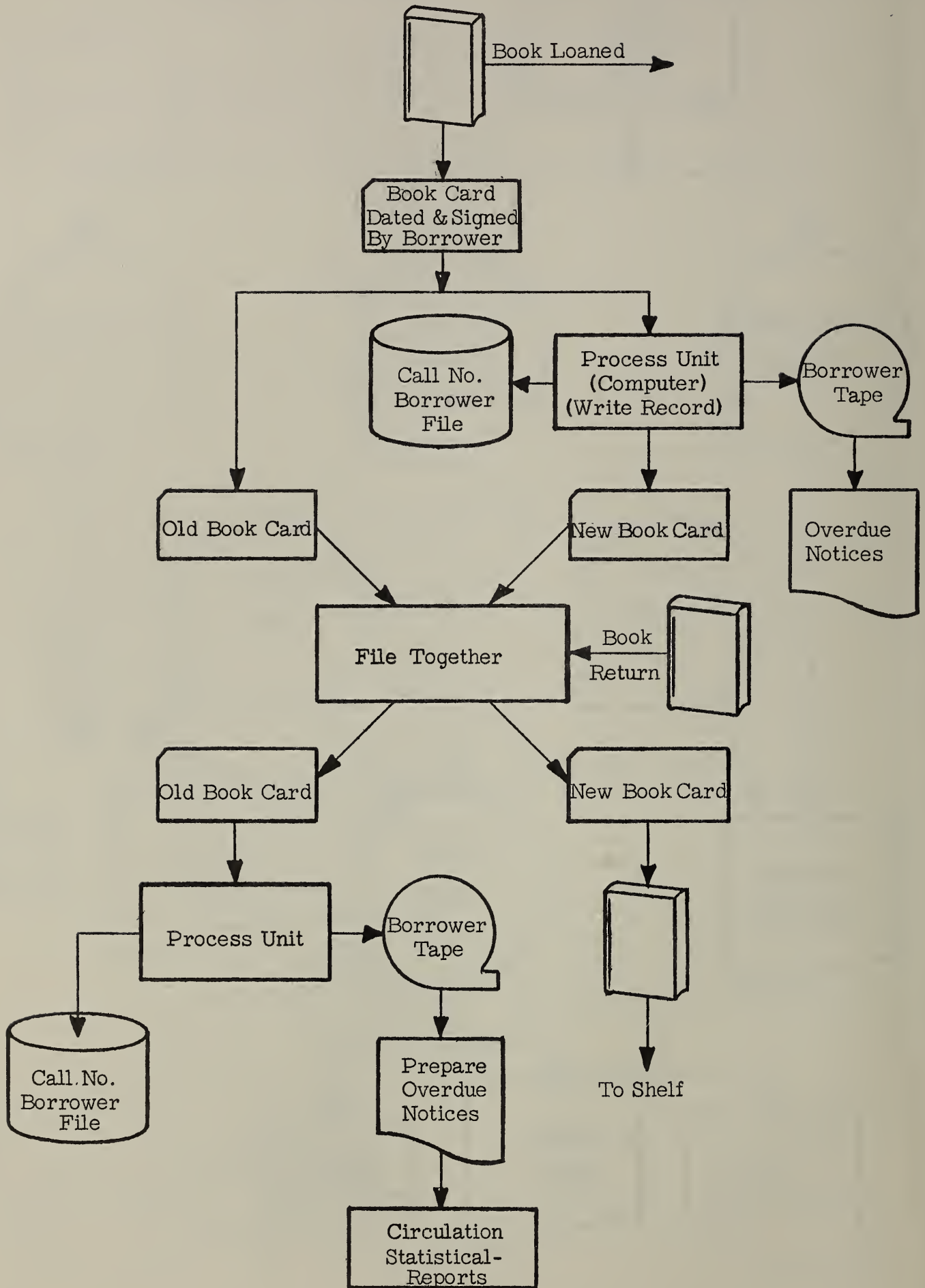




# SERIALS INVENTORY



# CIRCULATION SYSTEM





SUBJECT ANALYSIS IN THE NATIONAL AGRICULTURAL LIBRARY  
A Comparative Study of Terms Used in the Public and in the Bibliography of Agriculture

Statement of the Problem

1. Can the subject headings used in the Table of Contents of the Bibliography of Agriculture, the terms used in the annual subject index of the Bibliography, and the subject headings of the NAL Public Catalog be brought together into one vocabulary (be made compatible) with a view to possible automation of subject analysis?
2. If the two systems can be made compatible, suggest a plan, outlining the steps necessary for the present staff to evolve a thesaurus useful to both activities.
3. If the plan above appears to contain features contrary to the work of each activity, suggest an alternate plan for obtaining the desired results.
4. Originally, the problem also included the following: Can the classification scheme for Forestry collections (Oxford System of Decimal Classification) and its index be converted and merged into the same schedules so that it could be incorporated at some future date, if this appeared desirable?

We feel that, in view of the project currently being carried on by Mr. Yerke, any decision regarding forestry terms would be premature. Mr. Yerke is preparing an index to the Oxford System. His study and the terms used in the Bibliography of Agriculture and the Public Catalog need to be considered in relation to each other. His selection of terms may well affect the two systems and vice versa.

Survey of Situation

To obtain answers to Question 1, above, a pilot study was set up which would reveal the extent of the problem and the number of terms to be handled.

Outline of Method

The sections on INSECTS and FORESTRY were selected for the sample study.

1. Thermofax duplicates of the Catalog Section's Subject Authority File were made.
2. These headings were matched against the terms used in the subject index for 1961 of the Bibliography of Agriculture.  
(The Bibliography has no authority file as such for its index terms.)
3. The results of this matching were sorted into categories as follows:
  - a. Heading the same.
  - b. Need adjusting (heading similar, or nearly like; heading dissimilar)
  - c. Heading not used Bibliography of Agriculture.
  - d. See references.
    - (1) Heading referred to Different.
    - (2) Heading referred to Same.
    - (3) Heading referred to not in Bibliography of Agriculture.
4. The headings in all categories were then consulted in the NAL Public Catalog and the cards counted to determine the number that would be affected by revisions, as well as those that would not need to be changed.
5. The 1961 subject index was scanned for all entries using the word Insect or Insects and Forestry, alone or in combination with other words.
  - a. "P" slips were made for each occurrence of these words.
  - b. All related See and See Also references were noted as the scanning was done.
  - c. Comparison of these headings with the cataloging authority file was made in the same manner as above and sorted into categories as follows:
    - (1) Need checking in NAL authority file.
    - (2) Heading the same.
    - (3) Heading not in NAL.
    - (4) Heading needs adjusting.

Headings Investigated

Subject	Heading Same	In NAL; not B. A.	In B. A. ; not NAL	Need Adjusting
Insect (s)	6	10	75	68
Forestry	9	11	2	56
Total	15	21	77	124

A total of 816 subject slips were examined: Insects - 476; Forestry - 340.

The breakdown of headings in the above table includes:

1. Main headings only.
2. Subjects referred to in See references.

It excludes:

1. Subdivisions of main headings.
2. Subjects referred to in See also references.

This method of reporting was chosen because:

1. We felt that adjustment of main headings constitutes a major activity on the part of the professional staff. Activities related to subdivisions can be carried out, to a large extent, by clerical staff on instruction from the professionals.
2. Subjects referred to in See also references would lead us far afield from our defined area of investigation.

Catalog Entries Involved (Number of Cards)

<u>Subject</u>	<u>Need Changing</u>	<u>Remain unchanged</u>	<u>Total</u>
Insect(s)	4419 (98.5 o/o)	66 (1.5 o/o)	4485
Forestry	3938 (85 o/o)	693 (15 o/o)	4631
	8357 (91.8 o/o)	759 (8.3 o/o)	9116

All catalog cards were counted, including subdivisions, since any adjustment would require similar handling of each card.

In addition to the catalog cards which would need changing, all related subject slips, including cross-references and their tracings, would have to be adapted into the Subject Authority File.

Scanning the Bibliography of Agriculture for terms on Insects revealed 46 headings which do not begin with the word Insects or have references to them from Insects. Following the same technique, we located 12 such headings for Forestry. These were not checked against the cataloging list at this time, but are mentioned here to give an indication of the scope of the problem, particularly with regard to references.

The extent of the problem is further illustrated by the fact that the Bibliography of Agriculture 1961 index includes no entry beginning with the singular form Insect. The cataloging Subject Authority File contains 21 slips for such terms.

Another major discrepancy between the two systems results from the existence in the Subject Authority File of a very old See reference: Insects. See Entomology. This problem area was not pursued, but it is obvious that reconciling the subjects would be very time consuming.

Also, in the cataloging Subject Authority File in both areas, form subdivisions (Congresses, Periodicals, Research, etc.) were noted in passing: Insect(s) - 7; Forestry - 37.

Many of these appear as main headings in the Bibliography, but an occasional one is used as a subheading. This is indicative of another problem area which must be resolved in the preparation of policy and guidelines.

To give some idea of time and cost, present production standards for the work involved are given below.

<u>Activity</u>	<u>Civil Service Grade</u>	<u>Standard per hour</u>
Subject reworking	GS 7-11	2
Card pulling	GS 4-5	25
Card servicing	GS 4-5	30
Card typing	GS 4-5	25
Filing	GS 4-5	100

Beyond that, we are unable to project time and cost estimates. The time available for this study was too limited, and our sampling too small when compared with the approximately 87,000 slips in the Subject Authority File and the estimated 21,000 terms, exclusive of subheadings, in an annual index of the Bibliography of Agriculture. However, the results of even such a small survey give a frightening picture of the magnitude of any attempt by the present staff to reconcile the two systems as they exist.

A close look at our analysis of the situation causes us to reject this approach and recommend another which we feel is far more practical in the long run. To make adjustments as described above would mean combining two systems which are not in themselves wholly satisfactory. Using them as the basis for the new list would permit old errors to persist and new errors, unless due care were exercised, to creep in. What is more, handled by two, already understaffed divisions, it would stand a good chance of never being done at all, however conscientious that staff might be.

Rather than patching and piecing together a thesaurus, it is recommended that consideration be given to an alternate plan which would permit an all-out overhaul of the two lists to produce one tailor-made for agricultural libraries everywhere.

The plan outlined below is recommended. Library staff members will recognize that it is not a totally new thought. Even without extensive studies to substantiate their thinking, NAL catalogers have long believed that a fresh approach is necessary to produce a consistent, accurate, and up-to-date subject list. For this reason, when plans were made for issuing the preliminary edition of the Subject Heading List, arrangements were made for punching paper tape to be used later for just such a purpose. Wishful thinking leads us to hope that possible automation of the Bibliography of Agriculture subject index will make available a comparable tape for use in compiling a unified thesaurus.



This proposal consists of two phases.

Phase I related to the "kick off" stage and calls for a project of limited duration to:

1. Develop and issue a subject policy and guidelines to serve as a basis for preparing a definitive thesaurus of agricultural terms.
2. Prepare, edit, and issue the first edition of the thesaurus.
3. Plan in detail organization structure required for keeping the thesaurus up to date and issuing revised editions.

Funds should be obtained to finance staff and equipment for the initial stage of preparing guidelines and planning for publication of the first edition of the thesaurus:

- 1 Subject Analysis Coordinator: GS-13
- 1 Cataloger: GS-12
- 1 Indexer: GS-12
- 1 Nonprofessional assistant: GS-6

The actual preparation, editing, and issuing of the first edition would require additional staff:

- 8 Cataloger-Indexer Subject Specialists: GS-11 (one for each major subject field covered by the Bibliography)
- 6 Nonprofessional assistants: 1 GS-5  
3 GS-4  
2 GS-3

Consultants from agencies, societies, etc. (to work with the subject specialists in developing each part of the list)

All Civil Service grades above have been suggested on the basis of present Library structure.

The cost of this entire phase cannot be reasonably estimated without additional investigation which would include, ideally, a time study of comparing and revising a greater variety of catalog and Bibliography subjects as recorded on tape.

This phase might well reveal that, where overlapping of activities in Bibliography of Agriculture and NAL cataloging occurs, merging of staff could also be considered for the continuing operation. Familiarity with a thesaurus common to both activities might make this combination of talents and professional ability practical and profitable. The language and subject competence of the "ambivalent" staff members would be utilized to best advantage in a combined operation. One can see a streamlined organization here that would be a director's dream. It would be worth keeping in mind.

Phase II is concerned with the continuing operation and is described here only briefly. As pointed out above, the initial project should be assigned the responsibility for developing the details on the basis of its experience in preparing the first edition.

Regularly appropriated funds should provide for continuing concentration on subject analysis. The Subject Analysis Coordinator would require a permanent staff of nonprofessional assistants.

Additions to and changes in the thesaurus would originate with the cataloging and indexing staff. The proposals would be submitted, through proper channels, to the Coordinator. In cooperation with a review committee composed of senior catalogers and indexers, the Coordinator would review the additions and changes and prepare revisions of the list.

The Coordinator, also, would be responsible for an overall review prior to the publication of each new edition.

#### IN A NUTSHELL

The headings now in use in the Bibliography of Agriculture and in the Public Catalog certainly cannot be considered truly compatible in their present form. There are many basic similarities, however, and the differences which exist could be reconciled but at great cost of time and labor not presently available. Also, if such a project were carried out under pressure for quick results, present weaknesses in both systems could not be eliminated.

Whether or not speed is determined to be of the essence, in order to merge the two systems, it appears preferable to "close off" and, ideally, publish the present card catalog, rather than to attempt to change the many cards which would be involved in cases where the Bibliography treatment seems to be the better one. In any event, the preparation of the necessary thesaurus would require the cooperative efforts of both indexing and cataloging staff.

In view of the above statements, it appears that the wise course of action would be to make haste slowly with regard to the development of a single subject heading system for the National Agricultural Library. On the other hand:

1. The decision to automate or not to automate the Bibliography of Agriculture should not be dependent upon this project.
2. Immediate attention should be given to developing and implementing plans for producing an agricultural subject heading list, on the basis of: (a) the tape byproduct of the preliminary edition now being prepared for publication; (b) tape which will be available if the Bibliography is automated. The resulting thesaurus of agriculture terms should be published and made readily available.
3. Concurrent with the development of a subject heading list, consideration should be given to the possibility of devising or adopting an improved classification scheme.



## SAMPLING METHOD AND REQUIREMENTS QUESTIONNAIRE

## DEVELOPMENT OF THE QUESTIONNAIRE

The Systems Requirement Group was to make a study "To find out what it is the research people want and what system can produce it". More specifically its functions as outlined at the start of the project were to include (1) identify user groups, (2) to visit agencies and Land-Grant Colleges to get needs and potential benefits from information retrieval system.

After a month spent in visiting related projects, reviewing the literature, and hearing about the experiences of others who were deeply involved in information retrieval projects, the task force had a better understanding of the complexities of information retrieval and the enormity of the assignment. It was decided that the objectives should be redefined so as to limit the scope to bring the assignment within a manageable size. The following object and plan of work was set forth:

"The objective of the Task Force is to find economical and efficient ways of fulfilling the requirements of the U. S. Department of Agriculture for scientific and technical information. The Task Force will:

1. Conduct a sample survey of the research scientists in the Department of Agriculture to:
  - (a) Determine their needs for published information.
  - (b) Identify the sources and services through which these needs are currently met.
  - (c) Assess the adequacy of the sources and services so identified."

(Item 2 omitted as not pertinent to the questionnaire)

The questionnaire was selected as a means of gathering information rather than through interviews as first planned since about 3/4 of the research scientists are located in field offices throughout the Nation as well as in Foreign countries. The scientific research worker was chosen as the population group because it is one of the most important user groups, it is definable, and the information problems of the scientific community are getting national attention.

A questionnaire was drafted by the Requirements group leader. Results of other surveys concerned with methods by which research workers find information were reviewed as a guide in designing this questionnaire. Consultation with a staff worker of the American Institute of Physics who had some experience in this type of survey was also fruitful.

Copies of the first draft of the questionnaire were distributed for criticism in a group meeting that included all members of the Task Force, administrators from all of the Divisions of the Library, as well as some one from the National Bureau of Standards, and a member of a firm making a special study of the Bibliography under a government contract.

As a result of the criticisms offered at the meeting, or later submitted in writing, it was decided that there were two distinct types of information being collected from the Department scientists and it could best be done through two separate questionnaires.

The first questionnaire to be developed was concerned with how the literature search is made, that is what are the sources used by the research workers to gain access to scientific and technical information. A related concern was the age of material that the scientist needed ready access to. This questionnaire design, and the sample survey plans were worked out by a group composed of the two group leaders of the System Design and the Requirements groups, a Task Force member who is a statistician, and a staff member on detail from the National Bureau of Standards.

What was left of the first draft of the inquiry after the sources and age of material were pulled out, became the contents of the second questionnaire. This questionnaire was concerned with the library services available to the research worker, and an evaluation of the principal tool which is the Bibliography of Agriculture. As a measuring device a comparison was made with Biological Abstracts.

The questions and form of both questionnaires were determined in the main by the diversified interest and geographic dispersion of the population group being measured. Although the population was restricted to research workers, the subject field of the research workers are of great variety. There were 51 different Civil Service GS series included. The special fields included economics, engineering, physics, chemistry, biology, and interdisciplinary sciences. Every section of the country as well as some foreign countries, are represented in the field location. The facilities varied from (1) the field location that has no close library, to (2) a location in a large University with very good collections in the scientists special field, or (3) a location in the D. C. -Beltsville area that offers outstanding facilities for access to world literature.

Both questionnaires were developed for the purpose of collecting data that would give a broad look at the research workers needs and problems in getting access to scientific and technical publications. It was believed that such a broad approach would show that library services could be developed that would benefit all researchers in the Department. This approach would also delineate the areas that needed specialized help or that would require a deeper study.

Both questionnaires were pretested by interviews with scientists selected at random from the population, but located in the D. C. -Beltsville area. Further changes in questionnaire design were made on the basis of the pretest and after consultation with Department personnel experienced in questionnaire and survey design.



TABLE SP-1

NUMBER OF USDA RESEARCH PERSONNEL BY CIVIL SERVICE CLASS SERIES

GROUP	GS SERIES	GRADES 7 - 11				SUB TOT	GRADES 12 AND ABOVE								SUB TOT	TOTAL	GEOG LOCATION		SAMPLE FOR QUESTIONNAIRES																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
		7	9	11	12		13	14	15	16	17	18	19	20			21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	112

TABLE SP-1 (CONT) NUMBER OF USDA RESEARCH PERSONNEL BY CIVIL SERVICE CLASS SERIES

GROUP	GS SERIES	GRADES 7 - 11					SUB TOT	GRADES 12 AND ABOVE								SUB TOT	TOTAL	GEOG LOCATION		SAMPLE FOR QUESTIONNAIRES				
		7 9 11						12	13	14	15	16	TOT	12	13			14	15	16	NO	PERCENT	NO	PERCENT
		7	9	11	7	9		11																
08	813 Hydraulic Engin.			6	14		20	9	8	8	1		26	46	41	5								
	890 Agricultural Engin.	30	28	55			113	57	32	17	3		109	222	187	35								
	Subtotal	30	34	69			133	66	40	25	4		135	268	228	40								
09	850 Electrical Engin.			1			1	2	4	5	1		12	13	1	12								
	855 Electronic Engin.			4	2		6		10	4	1		15	21	1	20								
	893 Chemical Engin.	7	8	22			37	21	21	8	1		51	88	88									
	Subtotal	7	12	25			44	23	35	17	3		78	122	90	32								
07, 08, & 09 Subtotal		43	57	114			214	112	91	48	7		258	472	390	82			80	170/o	77	160/o		
10	1310 Physics	6	5	11			22	12	5	3	2		22	44	40	4								
	1320 Chemistry	104	155	159			418	183	139	66	26		414	832	684	148								
	Subtotal	110	160	170			440	195	144	69	28		436	876	724	152			161	180/o	155	180/o		
11	491 Dairy Mfg. Tech.	1	1				2	1	2	1			4	6		6								
	1301 Gen. Phys. Sci.									1	1		2	2		2								
	1382 Food Technician	1	1	3			5	1					1	6	1	5								
	1384 Textile Technician	2	2	3			7	5	3	1			9	16	12	4								
	1390 Technology	5	5	12			22	6	4	9	2		21	43	35	8								
	1529 Mathematical Stat.		1				1						1	2	1	1								
	1530 Statistician			1			1						1	1		1								
	Subtotal	9	10	19			38	13	10	12	3		38	76	49	27			13	170/o	15	200/o		
12	401 Biology	6	3	4			13	2	1		1		4	17	5	12								
	403 Microbiology		2	3			5	9	2	6	1		18	23	19	4								
	405 Pharmacology		1				1	1	1	1	1		4	5	5									
	410 Zoology			1			2	1		1			2	4	3	1								
	412 Parasitology	3	2	11			16	15	8	7			30	46	20	26								
	413 Physiology			2			2	2		1			3	5	1	4								
	440 Genetics	1	8	24			33	32	15	8	1		56	89	79	10								
	487 Husbandry	15	12	21			48	18	12	1	1		32	80	37	43								
	490 Agric. Technology	2	1				3						1	3	2	1								
	494 Microanalysis		1	1			2	1					1	3	1	2								
703 Veterinary																								
Subtotal	27	31	67			125	81	40	25	5		151	276	172	104			51	180/o	50	180/o			
GRAND TOTAL		2,197						2,266						4,463	3,284	1,179		790		764				



## SAMPLING PLAN

### The Population

Define the population --

The U. S. Department of Agriculture research scientists were selected as the finite group to be sampled. To specifically define the population group, the Civil Service class series codes were selected that included the word research in the definition of the series of classes established under the position-classification plan as published in the U. S. Civil Service Commission handbook. A list of the 51 series selected is shown in table SP-1.

The research workers included in the population met the following criteria:

- (1) Research is included in the description of the Civil Service class series code -- the 51 series cited above.
- (2) The worker's division or section was designated by his agency as primarily for research.
- (3) Grades 7 or above.

Collect the names --

Agencies were asked to supply the name, location, Civil Service series code and grade, and annual salary rate excluding government contributions. About 60 percent of the total research workers were in Agricultural Research Service, and for this group a punch card and listing of the employees meeting the criteria were supplied by the Agency. The names for the Forest Service and Economic Research Service were copied from the Agency Records, with the members of the Agency and Task Force working together on the project. The other agencies compiled the list for the Task Force. The addresses were omitted from the population list because this information was not available on the record that showed class series code, grade and salary. The addresses were taken off for the sample names only so as to reduce the work load. A punch card was prepared for each research worker in the Population group. Since punch cards were made available for ARS research workers the ARS card format was used for punching the names and identification information for other agencies.

### The Sample

Select Sample --

A stratified sample was selected by arranging the population names by the 51 class series and selecting every nth name beginning with a random number. Punch cards for the 4463 names in the population were sorted into the 51 Civil Service class series codes and alphabetized within each series code (agency disregarded).

To utilize EAM equipment to draw the sample the cards were then divided into two groups by selecting every other card. Sample #1 for the Requirements Inquiry on Information Sources was drawn from one group by selecting every other card. It was necessary to eliminate every nth card to bring the sample number below 1,000, as this was the number of questionnaires printed, thus a sampling ration of about 1/5 was finally selected.

In the same way Sample #2 for the Library Services questionnaire was selected from Group Number 2, thus there was no opportunity for a duplication of names in the two samples.

#### USDA RESEARCH WORKERS, BY AGENCY

AGENCY		POPULATION	SAMPLE NO. 1 REQUIREMENTS INQUIRY	SAMPLE NO. 2 SERVICES INQUIRY
Code	Name	No.	Number mailed	Number mailed
1	AMS	173	35	40
2	ARS	2702	562	565
3	ERS	404	82	79
4	FAS	58	16	12
5	FCS	44	11	14
6	FS	1026	225	202
7	REA	32	omitted	omitted
8	SCS	15	2	1
9	SRS	9	3	3
		<u>4463</u>	<u>936</u>	<u>916</u>

#### Prepare Mailing Name Labels --

Punch cards for each sample were machine sorted by the code for town, State, Division, Agency and machine listed with names spread out so that addresses were added to this list. This sort put the names back into order by Agency and Division so that addresses could be copied from Agency records. It should be noted that for Forest Service employees the area headquarters were entered by each name rather than field location. The sealed envelopes addressed to each employee were then forwarded by the Forest Service in bulk to the area headquarters and redistributed to field location. This is in contrast to direct mailing by Library Task Force for other agencies. Individual addresses for Forest Service employees were not easily available from Washington, D. C. records, so that distribution from area headquarters was the simplest method.

Address labels were typed in duplicate. One was placed on the inquiry in a position for window envelope mailing. Additional identification codes were entered on the address label.

The number assigned to each correspondent was used in place of name for all punched card data. The area code distinguished between Field employees and Washington, D. C. and Beltsville area employees.

All survey data were summarized for each of the two areas.

The 12 job classification groups shown in Table SP-1 were based on a grouping of similar series codes so as to reduce the number of groups from 51 to 12 discipline groups for analysis purposes.

All data were summarized for each of the 12 groups although the Engineering groups 7, 8, and 9 were combined for much of the analysis, thus reducing the number of discipline groups to 10.

The G. S. Grade was entered on the inquiry by each respondent. These were then coded, "O" for grades 7 through 11, and referred to as Junior Scientists, and "1" for grades 12 or above and referred to as Senior Scientists. All data were summarized for each of these groups.

Thus the questionnaire for each research worker contained the control information which was used throughout the analysis. The control data permitted a sort by -

Area	(2 areas)
Job classification	(10 disciplines)
G. S. grade	(junior group and senior group)

#### Mail the questionnaires --

##### Requirements:

Questionnaire #1 was the Inquiry on Requirements of USDA Research Workers for Access to Scientific and Technical Publications. Enclosed with this Inquiry was the Specialties List used by the National Science Foundation to maintain the National Register of Scientific and Technical Personnel. This list was an integral part of the survey. The only identification that was entered on the Specialties List was the Employee Identification Number, which was posted to the list before mailing. For analysis purpose this permitted the transfer of control information from the punched card for the Inquiry data to the punched card for the Specialties List data (EAM equipment).

The 936 questionnaires and specialty lists were mailed August 19, 1962. A mimeograph letter signed by the Agency head and a return envelope addressed to the National Agricultural Library were also enclosed.

As the questionnaires were received, the duplicate address label was destroyed for the respondent.

About September 20, 1962, a reminder letter signed by the Head of the Library Task Force was mailed to 370 research workers who had failed to return the questionnaire, using the remaining duplicate address labels.

##### Library Services:

The mailing procedures for the Library Services Inquiry was the same as for the Requirements Inquiry, except there was no Specialties List enclosed. Each correspondent received the questionnaire, a mimeographed letter from the Head of the Agency (same letter was used for both inquiries) and a return envelope. There were 916 inquiries mailed on September 6, 1962, and a follow-up reminder on October 4, 1962, to 450 names.

## THE SURVEY

### Response Rate

The letter from the Agency Head urging cooperation and the reminder letter to delinquents from the Library Task Force leader brought in an excellent response.

There was an 84.4 percent response to the Requirements Inquiry, with 790 reports summarized out of the 936 mailed. The response rate to the Services Inquiry was almost as high at 83.4 percent with 764 reports summarized out of a total of 916. This is outstanding cooperation considering the Services Inquiry was a 4 page detailed questionnaire.



	Response Rate		
	Requirements Inquiry	Specialties List	Services Inquiry
Number mailed	936	936	916
Number tabulated	790 <u>1/</u>	763 <u>1/</u>	764
Percent response	84.40/o	81.50/o	83.40/o

1/ 756 returned both the Requirements and the Specialties List  
7 returned only the Specialties List  
27 returned only the Requirements questionnaire

#### Respondents by Discipline, Grade and Area

##### Discipline --

The 10 discipline groups are represented in about the same proportion in the two surveys.

The last two columns of table SP-1 compare the two inquiries for the relationship of the number tabulated as a percentage of the number in the population by discipline groups. This percentage ranges from 15 to 20 percent with most groups showing 17 or 18 percent which is the same as the total for all disciplines.

##### Grade and Area --

The Junior grade (7-11) and Senior grade (12 and above) research workers are represented in about the same proportion in the two surveys. In the Requirements Survey the Junior grade research workers accounted for 46 percent of the total, compared with 45 percent for the Services Inquiry. However, in the Population the Junior grades accounted for 49 percent of the total research workers. One explanation may be that the new employees are more apt to be in the entrance grade of 7. It was evident from some of the comments that the new employee did not feel he had enough experience to be able to meaningfully answer the questions. In some cases the assignments were not yet of the level to require extensive library use.

The Field employees were represented in about the same proportion in the two surveys -- 77 percent of the workers in the Requirements Inquiry and 76 percent in the Services Inquiry were employed outside of the D.C. and Beltsville area.

#### Respondents -- Requirements and Services Inquiries, by Grade and Area

			Percent of Total Number Tabulated		
By Grade:			Population	Requirements Inquiry	Services Inquiry
Junior	In Field			37	37
		D. C. and Beltsville		<u>9</u>	<u>8</u>
		TOTAL Junior	49	46	45
Senior	In Field			40	39
		D. C. and Beltsville		<u>14</u>	<u>16</u>
		TOTAL Senior	51	<u>54</u>	<u>55</u>
		TOTAL BY GRADE		<u>100</u>	<u>100</u>
By Area:	In Field			77	76
		D. C. and Beltsville		<u>23</u>	<u>24</u>
		TOTAL	<u>100</u>	<u>100</u>	<u>100</u>

#### Inquiry on Requirements of USDA Research Workers for Access to Scientific and Technical Publications

##### Respondents --

There were 790 questionnaires tabulated out of a total of 936 mailed. In the following table is shown the number of respondents according to grade, job classification and location. Grades 7 through 11 have been combined as a junior grade classification and grade 12 and above as a senior grade. The job classifications have been grouped into 10 classes. For the detail of the Civil Service title codes included in each group see table SP-1.

# INQUIRY ON REQUIREMENTS OF USDA RESEARCH WORKERS FOR ACCESS TO SCIENTIFIC AND TECHNICAL PUBLICATIONS

August 1962

If your name and address, as given  
at left, are incomplete or incorrect,  
please indicate corrections here:

\_\_\_\_\_  
\_\_\_\_\_

**NOTE:** All information identifying you or your participation in this survey is regarded as confidential. It will be used for statistical purposes only. The fact that you participated will not be divulged or released in any way that might allow identification of you, of your office, or of your projects.

USDA Agency: \_\_\_\_\_ GS Grade: \_\_\_\_\_

Civil Service Job Title: \_\_\_\_\_

Short description of your principal duties in USDA: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

How long have you been carrying on these duties?..... (years)

.....

This questionnaire is intended to measure your professional requirements for published information and your problems in obtaining it. You are asked to indicate your fields of interest and to identify the sources you use to gain access to information in those fields of interest.

## Your Fields of Interest

Enclosed is a copy of the Specialties List used by the National Science Foundation in maintaining the National Register of Scientific and Technical Personnel. You may have used a similar list if you submitted a National Register Questionnaire specifying the areas of your professional competence. The areas with which the present survey is concerned are not necessarily those of your professional competence, but those in which you need and use published scientific and technical information.

Instructions in this section of the questionnaire refer to the accompanying Specialties List. Read through the following instructions and observe the example before marking the List.

**Instructions:** Review the list. Select those specialty titles describing fields in which subject matter, methods, or other information is important to you. For each specialty title selected:

1. Circle the corresponding code number on the List;
2. If your primary interest is for methods, procedures, or techniques, write the letter, "M", before the circled code number;
3. Estimate the time in years when most information important to you is of historical rather than current interest. To the left of the circled code number (and the letter "M" if used) write that time in years from initial publication date.

**Example:**

2	M	(7802)	Physiology Reproduction
50		(8X06)	Zoology Parasitology
25		(8503)	Animal Husbandry Small Animal

Now please mark the Specialties List in accordance with the instructions. Mark as many fields as you think important.



# Information Sources

A list of potential sources of information appears after several of the questions in this section. The same list is used each time. Indicate your answers to each of these questions by marking one or more entries in the corresponding list. The source list is not exhaustive and some items may overlap or may not apply to all given questions. If in doubt, please mark all items which may be applicable in any given case.

1. Which sources are or have been available to you and have you used most?

- |  |  |   |
|--|--|---|
| a <input type="checkbox"/> Informal personal contact or correspondence (other than with colleagues or at meetings) | h <input type="checkbox"/> Published indexes or catalogs                               | q <input type="checkbox"/> Office or agency reference files or reference services               |
| b <input type="checkbox"/> Conversations with colleagues   | i <input type="checkbox"/> Memory or previous use                                      | r <input type="checkbox"/> Bibliographies and reference lists                                   |
| c <input type="checkbox"/> Browsing in old or out-dated literature   | j <input type="checkbox"/> By chance or accident (as while looking for something else) | s <input type="checkbox"/> Library card catalogs  |
| d <input type="checkbox"/> Preparation of invited papers or speeches   | k <input type="checkbox"/> Abstracting journals or services                            | t <input type="checkbox"/> Library reference services   |
| e <input type="checkbox"/> Personal files, notes, or reference lists   | l <input type="checkbox"/> Personal or professional activities outside USDA            | u <input type="checkbox"/> Periodic or cumulative indexes to individual journals or periodicals |
| f <input type="checkbox"/> Library acquisition list  | m <input type="checkbox"/> Routing and distribution of current literature              | v <input type="checkbox"/> Browsing in library  |
| g <input type="checkbox"/> Recent issues of journals or periodicals  | n <input type="checkbox"/> Your other work or problems                                 | w <input type="checkbox"/> Counsel or advice of superiors                                       |
|  | o <input type="checkbox"/> Review and historical articles                              | x <input type="checkbox"/> Standard reference books, texts, or handbooks                        |
|  | p <input type="checkbox"/> Attendance at scientific and technical meetings             | y <input type="checkbox"/> Periodic progress reports  |
|  |  | z <input type="checkbox"/> OTHER (specify) _____  |

2. Through which sources have you found ideas for new projects or investigations?

- |  |  |   |
|--|--|---|
| a <input type="checkbox"/> Informal personal contact or correspondence (other than with colleagues or at meetings) | h <input type="checkbox"/> Published indexes or catalogs                               | q <input type="checkbox"/> Office or agency reference files or reference services               |
| b <input type="checkbox"/> Conversations with colleagues   | i <input type="checkbox"/> Memory or previous use                                      | r <input type="checkbox"/> Bibliographies and reference lists                                   |
| c <input type="checkbox"/> Browsing in old or out-dated literature   | j <input type="checkbox"/> By chance or accident (as while looking for something else) | s <input type="checkbox"/> Library card catalogs  |
| d <input type="checkbox"/> Preparation of invited papers or speeches   | k <input type="checkbox"/> Abstracting journals or services                            | t <input type="checkbox"/> Library reference services   |
| e <input type="checkbox"/> Personal files, notes, or reference lists   | l <input type="checkbox"/> Personal or professional activities outside USDA            | u <input type="checkbox"/> Periodic or cumulative indexes to individual journals or periodicals |
| f <input type="checkbox"/> Library acquisition list  | m <input type="checkbox"/> Routing and distribution of current literature              | v <input type="checkbox"/> Browsing in library  |
| g <input type="checkbox"/> Recent issues of journals or periodicals  | n <input type="checkbox"/> Your other work or problems                                 | w <input type="checkbox"/> Counsel or advice of superiors                                       |
|  | o <input type="checkbox"/> Review and historical articles                              | x <input type="checkbox"/> Standard reference books, texts, or handbooks                        |
|  | p <input type="checkbox"/> Attendance at scientific and technical meetings             | y <input type="checkbox"/> Periodic progress reports  |
|  |  | z <input type="checkbox"/> OTHER (specify) _____  |

3. What sources have been most useful to you when beginning a retrospective search for information pertinent to a project or subject area?

- |  |  |   |
|--|--|---|
| a <input type="checkbox"/> Informal personal contact or correspondence (other than with colleagues or at meetings) | h <input type="checkbox"/> Published indexes or catalogs                               | q <input type="checkbox"/> Office or agency reference files or reference services               |
| b <input type="checkbox"/> Conversations with colleagues   | i <input type="checkbox"/> Memory or previous use                                      | r <input type="checkbox"/> Bibliographies and reference lists                                   |
| c <input type="checkbox"/> Browsing in old or out-dated literature   | j <input type="checkbox"/> By chance or accident (as while looking for something else) | s <input type="checkbox"/> Library card catalogs  |
| d <input type="checkbox"/> Preparation of invited papers or speeches   | k <input type="checkbox"/> Abstracting journals or services                            | t <input type="checkbox"/> Library reference services   |
| e <input type="checkbox"/> Personal files, notes, or reference lists   | l <input type="checkbox"/> Personal or professional activities outside USDA            | u <input type="checkbox"/> Periodic or cumulative indexes to individual journals or periodicals |
| f <input type="checkbox"/> Library acquisition list  | m <input type="checkbox"/> Routing and distribution of current literature              | v <input type="checkbox"/> Browsing in library  |
| g <input type="checkbox"/> Recent issues of journals or periodicals  | n <input type="checkbox"/> Your other work or problems                                 | w <input type="checkbox"/> Counsel or advice of superiors                                       |
|  | o <input type="checkbox"/> Review and historical articles                              | x <input type="checkbox"/> Standard reference books, texts, or handbooks                        |
|  | p <input type="checkbox"/> Attendance at scientific and technical meetings             | y <input type="checkbox"/> Periodic progress reports  |
|  |  | z <input type="checkbox"/> OTHER (specify) _____  |

4. What sources have led you to new and useful information about methods, techniques or procedures?

- |  |  |   |
|--|--|---|
| a <input type="checkbox"/> Informal personal contact or correspondence (other than with colleagues or at meetings) | h <input type="checkbox"/> Published indexes or catalogs                               | q <input type="checkbox"/> Office or agency reference files or reference services               |
| b <input type="checkbox"/> Conversations with colleagues   | i <input type="checkbox"/> Memory or previous use                                      | r <input type="checkbox"/> Bibliographies and reference lists                                   |
| c <input type="checkbox"/> Browsing in old or out-dated literature   | j <input type="checkbox"/> By chance or accident (as while looking for something else) | s <input type="checkbox"/> Library card catalogs  |
| d <input type="checkbox"/> Preparation of invited papers or speeches   | k <input type="checkbox"/> Abstracting journals or services                            | t <input type="checkbox"/> Library reference services   |
| e <input type="checkbox"/> Personal files, notes, or reference lists   | l <input type="checkbox"/> Personal or professional activities outside USDA            | u <input type="checkbox"/> Periodic or cumulative indexes to individual journals or periodicals |
| f <input type="checkbox"/> Library acquisition list  | m <input type="checkbox"/> Routing and distribution of current literature              | v <input type="checkbox"/> Browsing in library  |
| g <input type="checkbox"/> Recent issues of journals or periodicals  | n <input type="checkbox"/> Your other work or problems                                 | w <input type="checkbox"/> Counsel or advice of superiors                                       |
|  | o <input type="checkbox"/> Review and historical articles                              | x <input type="checkbox"/> Standard reference books, texts, or handbooks                        |
|  | p <input type="checkbox"/> Attendance at scientific and technical meetings             | y <input type="checkbox"/> Periodic progress reports  |
|  |  | z <input type="checkbox"/> OTHER (specify) _____  |



<input type="checkbox"/> Informal personal contact or correspondence (other than with colleagues or at meetings)	<input type="checkbox"/> Published indexes or catalogs	<input type="checkbox"/> Office or agency reference files or reference services
<input type="checkbox"/> Conversations with colleagues	<input type="checkbox"/> Memory or previous use	<input type="checkbox"/> Bibliographies and reference lists
<input type="checkbox"/> Browsing in old or out-dated literature	<input type="checkbox"/> By chance or accident (as while looking for something else)	<input type="checkbox"/> Library card catalogs
<input type="checkbox"/> Preparation of invited papers or speeches	<input type="checkbox"/> Abstracting journals or services	<input type="checkbox"/> Library reference services
<input type="checkbox"/> Personal files, notes, or reference lists	<input type="checkbox"/> Personal or professional activities outside USDA	<input type="checkbox"/> Periodic or cumulative indexes to individual journals or periodicals
<input type="checkbox"/> Library acquisition list	<input type="checkbox"/> Routing and distribution of current literature	<input type="checkbox"/> Browsing in library
<input type="checkbox"/> Recent issues of journals or periodicals	<input type="checkbox"/> Your other work or problems	<input type="checkbox"/> Counsel or advice of superiors
	<input type="checkbox"/> Review and historical articles	<input type="checkbox"/> Standard reference books, texts, or handbooks
	<input type="checkbox"/> Attendance at scientific and technical meetings	<input type="checkbox"/> Periodic progress reports
		<input type="checkbox"/> OTHER (specify)

a <input type="checkbox"/> Informal personal contact or correspondence (other than with colleagues or at meetings)	h <input type="checkbox"/> Published indexes or catalogs	q <input type="checkbox"/> Office or agency reference files or reference services
b <input type="checkbox"/> Conversations with colleagues	i <input type="checkbox"/> Memory or previous use	r <input type="checkbox"/> Bibliographies and reference lists
c <input type="checkbox"/> Browsing in old or out-dated literature	j <input type="checkbox"/> By chance or accident (as while looking for something else)	s <input type="checkbox"/> Library card catalogs
d <input type="checkbox"/> Preparation of invited papers or speeches	k <input type="checkbox"/> Abstracting journals or services	t <input type="checkbox"/> Library reference services
e <input type="checkbox"/> Personal files, notes, or reference lists	l <input type="checkbox"/> Personal or professional activities outside USDA	u <input type="checkbox"/> Periodic or cumulative indexes to individual journals or periodicals
f <input type="checkbox"/> Library acquisition list	m <input type="checkbox"/> Routing and distribution of current literature	v <input type="checkbox"/> Browsing in library
g <input type="checkbox"/> Recent issues of journals or periodicals	n <input type="checkbox"/> Your other work or problems	w <input type="checkbox"/> Counsel or advice of superiors
	o <input type="checkbox"/> Review and historical articles	x <input type="checkbox"/> Standard reference books, texts, or handbooks
	p <input type="checkbox"/> Attendance at scientific and technical meetings	y <input type="checkbox"/> Periodic progress reports
		z <input type="checkbox"/> OTHER (specify)

a <input type="checkbox"/> Informal personal contact or correspondence (other than with colleagues or at meetings)	h <input type="checkbox"/> Published indexes or catalogs	q <input type="checkbox"/> Office or agency reference files or reference services
b <input type="checkbox"/> Conversations with colleagues	i <input type="checkbox"/> Memory or previous use	r <input type="checkbox"/> Bibliographies and reference lists
c <input type="checkbox"/> Browsing in old or out-dated literature	j <input type="checkbox"/> By chance or accident (as while looking for something else)	s <input type="checkbox"/> Library card catalogs
d <input type="checkbox"/> Preparation of invited papers or speeches	k <input type="checkbox"/> Abstracting journals or services	t <input type="checkbox"/> Library reference services
e <input type="checkbox"/> Personal files, notes, or reference lists	l <input type="checkbox"/> Personal or professional activities outside USDA	u <input type="checkbox"/> Periodic or cumulative indexes to individual journals or periodicals
f <input type="checkbox"/> Library acquisition list	m <input type="checkbox"/> Routing and distribution of current literature	v <input type="checkbox"/> Browsing in library
g <input type="checkbox"/> Recent issues of journals or periodicals	n <input type="checkbox"/> Your other work or problems	w <input type="checkbox"/> Counsel or advice of superiors
	o <input type="checkbox"/> Review and historical articles	x <input type="checkbox"/> Standard reference books, texts, or handbooks
	p <input type="checkbox"/> Attendance at scientific and technical meetings	y <input type="checkbox"/> Periodic progress reports
		z <input type="checkbox"/> OTHER (specify)

1-6 months ☐ 7-12 months ☐ 13-18 months ☐ 19-24 months ☐ longer ☐  
a b c d e

a <input type="checkbox"/> Informal personal contact or correspondence (other than with colleagues or at meetings)	h <input type="checkbox"/> Published indexes or catalogs	q <input type="checkbox"/> Office or agency reference files or reference services
b <input type="checkbox"/> Conversations with colleagues	i <input type="checkbox"/> Memory or previous use	r <input type="checkbox"/> Bibliographies and reference lists
c <input type="checkbox"/> Browsing in old or out-dated literature	j <input type="checkbox"/> By chance or accident (as while looking for something else)	s <input type="checkbox"/> Library card catalogs
d <input type="checkbox"/> Preparation of invited papers or speeches	k <input type="checkbox"/> Abstracting journals or services	t <input type="checkbox"/> Library reference services
e <input type="checkbox"/> Personal files, notes, or reference lists	l <input type="checkbox"/> Personal or professional activities outside USDA	u <input type="checkbox"/> Periodic or cumulative indexes to individual journals or periodicals
f <input type="checkbox"/> Library acquisition list	m <input type="checkbox"/> Routing and distribution of current literature	v <input type="checkbox"/> Browsing in library
g <input type="checkbox"/> Recent issues of journals or periodicals	n <input type="checkbox"/> Your other work or problems	w <input type="checkbox"/> Counsel or advice of superiors
	o <input type="checkbox"/> Review and historical articles	x <input type="checkbox"/> Standard reference books, texts, or handbooks
	p <input type="checkbox"/> Attendance at scientific and technical meetings	y <input type="checkbox"/> Periodic progress reports
		z <input type="checkbox"/> OTHER (specify)



10. Which sources (if any) have you tried to use but found to be of little value for finding information important to your research?

- |  |  |   |
|--|--|---|
| a <input type="checkbox"/> Informal personal contact or correspondence (other than with colleagues or at meetings) | h <input type="checkbox"/> Published indexes or catalogs                               | q <input type="checkbox"/> Office or agency reference files or reference services               |
| b <input type="checkbox"/> Conversations with colleagues   | i <input type="checkbox"/> Memory or previous use                                      | r <input type="checkbox"/> Bibliographies and reference lists                                   |
| c <input type="checkbox"/> Browsing in old or out-dated literature   | j <input type="checkbox"/> By chance or accident (as while looking for something else) | s <input type="checkbox"/> Library card catalogs  |
| d <input type="checkbox"/> Preparation of invited papers or speeches   | k <input type="checkbox"/> Abstracting journals or services                            | t <input type="checkbox"/> Library reference services   |
| e <input type="checkbox"/> Personal files, notes, or reference lists   | l <input type="checkbox"/> Personal or professional activities outside USDA            | u <input type="checkbox"/> Periodic or cumulative indexes to individual journals or periodicals |
| f <input type="checkbox"/> Library acquisition list  | m <input type="checkbox"/> Routing and distribution of current literature              | v <input type="checkbox"/> Browsing in library  |
| g <input type="checkbox"/> Recent issues of journals or periodicals  | n <input type="checkbox"/> Your other work or problems                                 | w <input type="checkbox"/> Counsel or advice of superiors                                       |
|  | o <input type="checkbox"/> Review and historical articles                              | x <input type="checkbox"/> Standard reference books, texts, or handbooks                        |
|  | p <input type="checkbox"/> Attendance at scientific and technical meetings             | y <input type="checkbox"/> Periodic progress reports  |
|  |  | z <input type="checkbox"/> OTHER (specify) _____  |

#### Other Comments or Criticisms

Please note here or on an attached sheet any comments you wish to make regarding anything in this questionnaire.

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Your comments are invited on any phase of the problems in current awareness, retrospective searching, obtaining books, periodicals, etc., as related to library services.

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About how long did it take you to fill out this questionnaire? \_\_\_\_\_

Date you completed it \_\_\_\_\_

Return the questionnaire AND the specialties list in the enclosed pre-addressed envelope to:

National Agricultural Library  
U. S. Department of Agriculture  
Washington 25, D. C.  
Room 1424

# RESPONDENTS

Number according to grade, area, and job classification

Job Class Group	Junior Grade GS 7-11			Senior Grade GS 12 & over			Total all grades		
	Field No.	D. C. & Belts. No.	Total Areas No.	Field No.	D. C. & Belts. No.	Total Areas No.	Field No.	D. C. & Belts. No.	Total Areas No.
1	11	30	41	10	53	63	21	83	104
2	36	3	39	33	5	38	69	8	77
3	30	9	39	33	13	46	63	22	85
4	22	1	23	28	4	32	50	5	55
5	57	3	60	59	4	63	116	7	123
6	15	1	16	23	2	25	38	3	41
7, 8, 9	40	3	43	34	3	37	74	6	80
10	62	14	76	72	13	85	134	27	161
11	3	1	4	6	3	9	9	4	13
12	15	8	23	17	11	28	32	19	51
Total	291	73	364	315	111	426	606	184	790

## REQUIREMENT INQUIRY INFORMATION SOURCES USED BY USDA RESEARCHERS

### SUMMARY

(1) Recent issues of journals or periodicals, (2) abstracting journals or services, (3) bibliographies, and reference lists, and (4) routing and distribution of current literature, were the most important sources of information used by USDA research scientists that may be classed as library services. Of the respondents to a survey of Department scientists, there were 93 percent who reported recent issues of journals or periodicals as a means of keeping abreast, and 85 percent who marked this source for leads to new methods, techniques, or procedures. Bibliographies and reference lists were first and abstracting journals or services second as sources used to begin a retrospective search. Although the above sources have been classed as library services because of the more complete coverage available from a library, it is realized that the scientist or his agency may personally obtain the important journals in a particular field of interest.

(1) Conversations with colleagues, (2) attendance at scientific meetings and (3) informal personal contacts or correspondence, are the sources of a personal nature that were in the top seven sources used to meet various information needs of the scientists. This reaffirms other findings of the importance of personal contacts to the research staff. These personal sources were important for ideas for new projects, for leads to new methods, techniques, or procedures, and for leads to unfamiliar subject areas. As would be expected, finding out about research prior to publication was mostly through these sources. About three fourths of the scientists reported that it was from 7 to 18 months after they heard about research before it was published.

### GENERAL

#### Introduction:

The purpose of this questionnaire is to obtain a measure of the USDA scientists' professional requirements for published information and the problems in obtaining it.

There were ten questions in all. Seven questions asked sources used to gain access to information to meet various kinds of needs such as: ideas for new projects; leads to new methods, techniques or procedures; leads in unfamiliar subject areas; to begin a retrospective search; to find historical material; to keep currently abreast in the scientists' area of research; and to find out about the work of other scientists before results were published. The first question was a general query as to sources that are or have been available and used most. One question asked the time interval between finding out about research work and the publication of results; another for sources tried, but found to be of little value.

A list of potential sources of information identified "a" through "y" appeared after each of the questions except the one related to time. The same list of sources was used each time. Instructions were: "answer each question by marking one or more of the sources; the source list is not exhaustive and some items may overlap or may not apply to all given questions; if in doubt mark all items which may be applicable in any given case."



Although the 25 sources appeared on the questionnaire in random order, they may be classed in two broad groups. Namely (1) library services, and (2) personal. There are 13 sources that relate to library services and 12 sources that generally require personal contacts, personal files or working arrangements. In the discussion and in some of the tables and charts, the sources have been grouped under the two general headings and arranged within each group in order of importance according to a composite rating as described in the next section.

#### Sources Marked per Respondent:

There were 790 questionnaires returned out of 915 mailed. This was a response rate of 86 percent and represented 18 percent of the population group. Most respondents answered all of the questions with one exception. Only about half answered last question which asked for sources tried, but found to be of little value. Of the 25 sources listed for each question, the respondents marked an average of 10 sources for the question which asked for sources available and used most. This question is more a composite of the other questions. For the 6 questions which related to specific needs the average number marked per question ranged from 4 to 6 sources.

#### Bar Charts and Tables:

Charts R1 and R2 show the percentage of respondents marking each source for the 13 most important sources. Chart R1 shows the percentages for questions 2, 4 and 5 while chart R2 shows the percentages for questions 3, 6 and 9. Chart R3 shows the 7-question composite rank percentage for all 25 sources and for comparative purpose, Chart R4 shows the percentage rank score for question 1 - sources available and used most. Charts R5-R12 show the percentage of respondents marking each of the 25 sources for the 9 questions. The data are in tables R13-R17.

### SOURCES

#### Composite Rank Rating:

As a means of measuring the overall usefulness of the 25 sources listed irrespective of the specific problem or purpose of search, a composite rating system was devised for combining questions 2-7, and 9. The composite score gives equal weight to each of the 7 questions. The 25 sources for each question were ranked from 1 for the highest number of responses to 25 for the lowest number of responses, -- see the statistical summaries for the Requirement Questionnaire. The source ranks were totaled for the 7 questions. The highest possible score of 7 (rank of 1 for each of the 7 questions) was equated to 100 -- See Table R14.

The rating of the sources based on this composite rank scoring is shown in chart R3, and statistical tables R13. 'Conversations with colleagues' scored the highest at 89 while 'preparation of invited papers or speeches' scored the lowest at 23. Of the top 10 sources, 4 may be classed as relating to personal contacts and 6 related to library services. In the personal contacts class in addition to 'conversation with colleagues', the leading source, there was the 4th rated source, 'attendance at scientific and technical meetings'; the 6th, 'informal personal contact or correspondence'; and the 9th, 'council or advice of superiors'. The 6 sources related to library services were: 'recent issues of journals or periodicals' scoring 2nd; 'abstracting journals or services' in 3rd place; 'bibliographies and reference lists' which rated 5th; 'routing and distribution of current literature' 7th; 'standard reference books, texts and handbooks' 8th; and 'review and historical articles' rated 10th.

The least important source of information for the Department scientist is reported to be 'preparation of invited papers or speeches', with a score of 23. 'Library acquisitions lists' rated next to the lowest with a score of 25. Other sources among the lowest 5 were 'browsing in old or out-dated literature', 'your other work or problems' and 'memory or previous use'. The next 5 from the bottom were 'personal or professional activities outside USDA', 'library card catalogs', 'library reference service', 'office or agency reference files or reference service', and 'browsing in library'.

#### Availability and Usefulness of Sources:

Question 1 asked "Which sources are or have been available to you and have you used most?" (For comparative purposes a rating score similar to the composite score was used with rank representing the source with the highest number of responses scored 100). Sources scoring high in the 7-question composite score also rated high for question 1, relating to sources available and used most. Significant exceptions: 'published indexes or catalogs' which rated 84 on the used most score, but only 53 on the composite score; 'standard reference books, texts or handbooks', 92 used most but 62 composite; 'personal files, notes or reference lists', 76 vs. 54; and 'library acquisition lists', 40 vs. 25. In these instances it appears that the questions about specific needs did not include the use the respondent had in mind when he marked the source as used most.

This question may be an indication of the general usefulness of a source, but can not be used to assess availability. If there were doubts in the minds of the respondents as to the definition of "used most" then this makes interpretation of the answers uncertain. In answering this question a respondent may not check a source because it has not ever been available, or not check it because he judged it not "most useful" even though available.

#### How Well Does a Particular Source Meet Various Needs?

(Discussion omits a source reported by less than 40 percent of scientists for any one question).

Table R15 shows the proportion of scientists in the sample marking a particular source to meet various requirements for



information as measured by the 7 questions (questions 2-7, and 9). Table R17 shows this percentage for field scientists compared with Washington, D. C. - Beltsville scientists and Table R16 for junior grade scientists compared with senior grade scientists.

#### Library Services Sources:

(g) 'Recent issues of journals or periodicals' was marked by over 50 percent of the scientists for all questions except as a help in finding useful historical material or to find out about research prior to publication. Its most important use was to keep abreast of scientific publications in the researchers' area of interest, being marked by 93 percent of the scientists in response to this question. Its next importance as a source was in leads to new methods, techniques or procedures (marked by 85 percent). This source ranked first for 3 questions, second for one and third for another.

(k) 'Abstracting journals or services' was of equal importance as a source for question 9, keeping abreast of scientific publications and question 3, for beginning a retrospective search -- marked by 54 percent of the scientists. It ranked among the top 6 sources for 5 questions.

(r) 'Bibliographies and reference lists' serves the most useful source for beginning a retrospective search being reported by 54 percent of the respondents. There were 39 percent of the scientists who marked it for leads to new information about methods, techniques or procedures and 35 percent who marked it for leads to information in unfamiliar subject areas.

(m) 'Routing and distribution of current literature' was most useful for question 9 -- keeping abreast of scientific publications (23 percent) -- and question 4-- new and useful information about new methods, techniques or procedures (16 percent).

(x) 'Standard reference books, texts, or handbooks' served to find historical material (marked by 50 percent), to begin a retrospective search (43 percent) and leads to information in unfamiliar subject areas (41 percent).

(o) 'Review and historical articles' - This type of article, as would be expected, was most useful as a source for finding useful historical material (marked by 65 percent), but also helpful in beginning a retrospective search for information pertinent to a project or subject area (45 percent).

(h) 'Published indexes or catalogs' served most importantly as a source for the same needs as in (o) 'Review and historical articles', but in reverse order. This source was marked by 40 percent of the scientists when beginning a retrospective search while 33 percent marked it as a help to find useful historical material.

(u) 'Periodic or cumulative indexes to individual journals' showed the same use as (h) 'published indexes or catalogs'. It was marked by 43 percent as useful when beginning a retrospective search and by 28 percent to find useful historical material.

#### Personal Sources:

(b) The source 'conversations with colleagues' is shown to be most useful for finding out about pertinent work of other scientists before results were published -- marked by 85 percent of the respondents. This source was next in importance for leads to ideas for new projects (marked by 75 percent) and for leads to new methods, techniques or procedures (marked by 72 percent). Conversations with colleagues ranked in the top 8 sources for all 7 questions.

(p) 'Attendance at scientific and technical meetings' is reported to be the most important as a source to find out about unpublished work of other scientists, being marked by 73 percent of the scientists in response to this in question 7. It serves next in importance as leads to new materials. Sixty-one percent of the scientists marked it as a source for ideas for new projects and the same percentage marked it for leads to new methods, techniques, or procedures. This source ranked second for 1 question, third for 3 questions and in the top 4 sources for 5 questions.

(a) 'Informal personal contact or correspondence (other than with colleagues or at meetings)' was most useful to fill needs asked in question 7 -- to find out about work of scientists before results were published -- as it was reported as a source for this question by 68 percent of the respondents.

(w) 'Council or advice of superiors' served its most important role in leads for ideas for new projects or investigations. It was reported as such a source most often (52 percent) by the junior grade than by the senior (34 percent), reflecting the guidance given a junior scientist when starting on a new project.

(e) 'Personal files, notes, or reference lists' was used as a source principally when beginning a retrospective search for information pertinent to a project or subject area. It was marked by 46 percent of the respondents in response to the retrospective search, question 3.

#### Sources of Little Value:

Question 10 asked for the sources that had been tried but found to be of little value for finding information important to the research. The response rate to this question was low, as it was answered by only about half of the respondents. In general the sources that were ranked at the bottom of the list in response to question 1 -- sources available and used most -- were ranked at the top for the question asking for sources that were tried, but found to be of little value. The first four sources ranked as of little value relate to library services. The first was 'browsing in old or out-dated literature'. However, there was one need that this fulfilled quite well. As a source to help find useful historical material, it was marked by 41 percent of the respondents. 'Library card catalogs' ranked second in the little value scale which shows that the card catalog isn't used much as a research tool, although it is indispensable as a locator of publications in a collection. 'Browsing in the



library' ranked third in the little value scale. However, 27 percent of the scientists marked this source for leads to unfamiliar subject areas and 21 percent as an aid to find historical material. The 4th ranking little value source was 'library acquisition list'. This was substantiated by its low rank for usefulness for all but the question to keep abreast of scientific publications being marked by 22 percent of the respondents.

## REQUIREMENTS

### Leads to New Materials, questions 2, 4, & 5

#### THROUGH WHICH SOURCES HAVE YOU FOUND IDEAS FOR NEW PROJECTS OR INVESTIGATIONS? (2)

Personal contacts are most fruitful in the search for new ideas. Conversations with colleagues was the leading source for ideas for new projects or investigations. It was marked by 75 percent of the scientists who responded to the question. More scientists in the field (77 percent) used this source than did those in Washington, D.C. -Beltsville (70 percent).

Recent issues of journals or periodicals was second in importance at 67 percent for all researchers, but 69 percent for field compared with 61 percent for D.C. -Beltsville. This was the only source in the top five that related to library services. Personal contacts characterized the next 3 sources: attendance at scientific and technical meetings (61 percent), counsel or advice of superiors (42 percent) and informal personal contact or correspondence (41 percent). In all of the top 5 sources, the percentage marked by field workers was greater than by D.C. -Beltsville workers. Junior grade scientists relied more on counsel or advice of superiors (52 percent marked this source) than did senior scientists (34 percent). The sources more important for senior grade than junior grade are: recent issues of journals ( 70 percent vs. 64 percent ), attendance at meetings (68 percent vs. 52 percent) and informal personal contact (44 percent vs. 38 percent). Junior grade would have less opportunity and also fewer contacts so that attendance at meetings would not be as fruitful as for the senior scientist.

#### WHAT SOURCES HAVE LED YOU TO NEW AND USEFUL INFORMATION ABOUT METHODS, TECHNIQUES OR PROCEDURES? (4)

The top 3 sources for finding leads to new methods and techniques are the same as for question 2 -- ideas for new projects - although not in the same order. The source, recent issues of journals or periodicals, ranked first and was marked by 85 pct. of the scientists (87 percent for field and 78 percent for D.C. -Beltsville). This is the largest response to a single source for any specific question. Another library service namely the routing and distribution of current literature, ranked 4th. Two sources requiring personal contacts again rated near the top. Conversations with colleagues was second, at 72 percent and attendance at scientific meetings third, at 61 percent.

There was little difference in the sources marked by senior or junior scientists except, as would be expected, a higher percentage of senior scientists marked attendance at scientific meetings. Junior grade scientists probably do not attend as many meetings as do senior grade.

That field scientists depend more on each of the 4 leading sources, than do D.C. -Beltsville scientists, is shown by the larger percentage of field scientists marking each source. Recent issues of journals was marked by 87 percent of the field compared with 78 percent of D.C. -Beltsville scientists; conversations with colleagues 73 percent compared with 66 percent; attendance at meetings would not be as fruitful as for the senior scientist.

#### WHAT SOURCES HAVE LED YOU TO INFORMATION IN PREVIOUSLY UNFAMILIAR SUBJECT AREA? (5)

The three sources marked by the largest number of scientists rank the same for leads in unfamiliar subject areas as for leads to new information about methods (question 4). Recent issues of journals or periodicals ranked first and was marked by 63 percent of the scientists; next was conversations with colleagues at 57 percent and attendance at scientific meetings at 44 percent. Grade makes little difference in the response to the top 5 sources except attendance at meetings was reported more frequently by senior grade. Sources were generally reported about the same in the field as in D.C. -Beltsville. One exception was the 42 percent marked by the field for abstracting journals or services compared with only 29 percent usage by D.C. -Beltsville scientists.

### Retrospective Search Questions 3 and 6

#### WHAT SOURCES HAVE BEEN MOST USEFUL TO YOU WHEN BEGINNING A RETROSPECTIVE SEARCH FOR INFORMATION PERTINENT TO A PROJECT OR SUBJECT AREA? (3)

The three leading sources most useful when beginning a retrospective search take the form of library services: (1) bibliographies and reference lists were checked as a source by 56 percent of the scientists; (2) abstracting journals or services by 54 percent and (3) recent issues of journals or periodicals by 52 percent. Scientists in the field show these sources as the top 3, but in a different order of importance. Abstracting journals are the top source for the field at 58 percent, with bibliographies and reference lists at 57 percent and recent issues of journals or periodicals at 47 percent. Scientists in D.C. -Beltsville show a different emphasis on the source, personal files, notes, or reference lists which ranked 4th for all workers, but takes the leading place being marked by 53 percent, followed by bibliographies and reference lists at 52 percent, and



recent issues of journals or periodicals at 47 percent. For this group abstracting journals or services which ranked 2nd for all workers, at 54 percent, moved down to 6th rank at 42 percent.

The senior scientists rank the sources in the same order as all grades. The junior scientists agreed on the 3 top sources but periodic or cumulative indexes to individual journals or periodicals (48 percent) ranked 4th compared with a rank of 7th for senior grades. The percentage of junior grades marking personal files, notes, reference or review and historical articles was considerably below the percentage of senior grades marking these 2 sources. The junior grades considered conversations with colleagues and periodic or cumulative indexes of individual journals or periodicals more important than did the senior grades.

#### WHAT SOURCES HAVE HELPED YOU TO FIND USEFUL HISTORICAL MATERIAL ? (6)

In the search for historical materials, the top 10 sources are characterized by library services, except conversations with colleagues, which ranks 7th. Leading the list are review and historical articles scored by 65 percent of the scientists, standard reference books, texts, or handbooks, by 50 percent, and bibliographies and reference lists by 48 percent.

Browsing in old or out-dated material is an important source in a historical search, as it was recorded by 41 percent of the scientists. But this is the only type of information search for which browsing in old material is shown to be useful. For the other 7 questions the source ranked 15th or lower and for 4 questions it ranked 23rd and lower.

The grade group did not affect the choice of sources except for standard reference books. Senior scientists found this source more helpful than did juniors (52 percent vs. 46 percent) as did D.C. -Beltsville scientists, at 56 percent compared with 46 percent for the field. The area did not make any difference in the responses to review and historical articles nor to browsing in old material but D.C. -Beltsville scientists scored the other 3 of the first 5 sources considerably more than did the field. Library card catalogs ranked 6th in the historical material search and 46 percent of D.C. -Beltsville scientists scored this source compared with only 29 percent of the field personnel. The difference in response for the two areas can only partly be explained by availability. There were 30 percent of the field scientists who reported library card catalogs available and useful (question 1) compared with 34 percent response by D.C. -Beltsville workers.

#### Keeping Currently Abreast Question 9

#### UPON WHICH SOURCES DO YOU MOST RELY FOR KEEPING CURRENTLY ABREAST OF SCIENTIFIC PUBLICATIONS IN YOUR AREA OF INTEREST OR RESEARCH? (9)

Recent issues of journals or periodicals source was far ahead of other sources as a means of keeping currently abreast. All but 7 percent of the scientists marked this source. It was more important to field scientists (95 percent) than to Washington, D.C. -Beltsville group (87 percent, but of equal importance to junior and senior grade. Abstracting journals was an important source to field workers (59 percent), but was not relied upon to such an extent by Washington, D.C. -Beltsville group (38 percent). For all workers this source ranked next to the highest ranking source, but was of equal importance to routing and distribution of current literature ( 54 percent ). However, neither area nor grade showed much influence on the response to routing current literature.

Attendance at scientific and technical meetings is reported to be important in keeping abreast of scientific articles. This source ranks 4th, but at 46 percent was not far below abstracting journals and current literature distribution. As was the case in the search for ideas for new projects (question 2), for new methods and procedures (question 4), and for work of other scientists prior to publication (question 7), the attendance at meetings was more important to scientists in the field (49 percent vs. 38 percent) and to senior scientists (50 percent vs. 41 percent).

#### Pre-publication Results - questions 7 & 8

#### IN CASES YOU CAN RECALL, THROUGH WHAT SOURCES HAVE YOU FOUND OUT ABOUT WORK OF OTHER SCIENTISTS PERTINENT TO YOUR OWN RESEARCH BEFORE THEIR RESULTS WERE PUBLISHED? (7)

As would be expected unpublished results were revealed through personal contacts in form of:

1. Conversations with colleagues reported by 85 percent of scientists.
2. Attendance at scientific meetings by 73 percent.
3. Informal personal contact by 68 percent.

Although counsel or advice of superiors ranked 4th, it was relatively unimportant, being scored by only 30 percent of the respondents.

Attendance at scientific meetings was marked by a larger percentage of field scientists (76 percent vs. 60 percent) and by more senior scientists (77 percent vs. 67 percent). However, for informal personal contacts the Washington, D.C. -Beltsville group scored highest (72 percent vs. 67 percent), as did the senior grade (74 percent vs. 62 percent).

#### ABOUT HOW MUCH TIME SEEMS TO ELAPSE BETWEEN THE TIME YOU FIND OUT ABOUT SUCH WORK (OTHER SCIENTISTS) AND THE TIME RESULTS ARE PUBLISHED? (9)

Check time periods 1-6 months; 7-12 months; 13-18 months; 19-24 months; longer.



Seven percent of the scientists reported that it was longer than 24 months after they heard about research before it was published. About 76 percent of the scientists marked the two time periods included between 7 to 18 months; 44 percent reported 7-12 months and 32 percent reported 13-18 months.

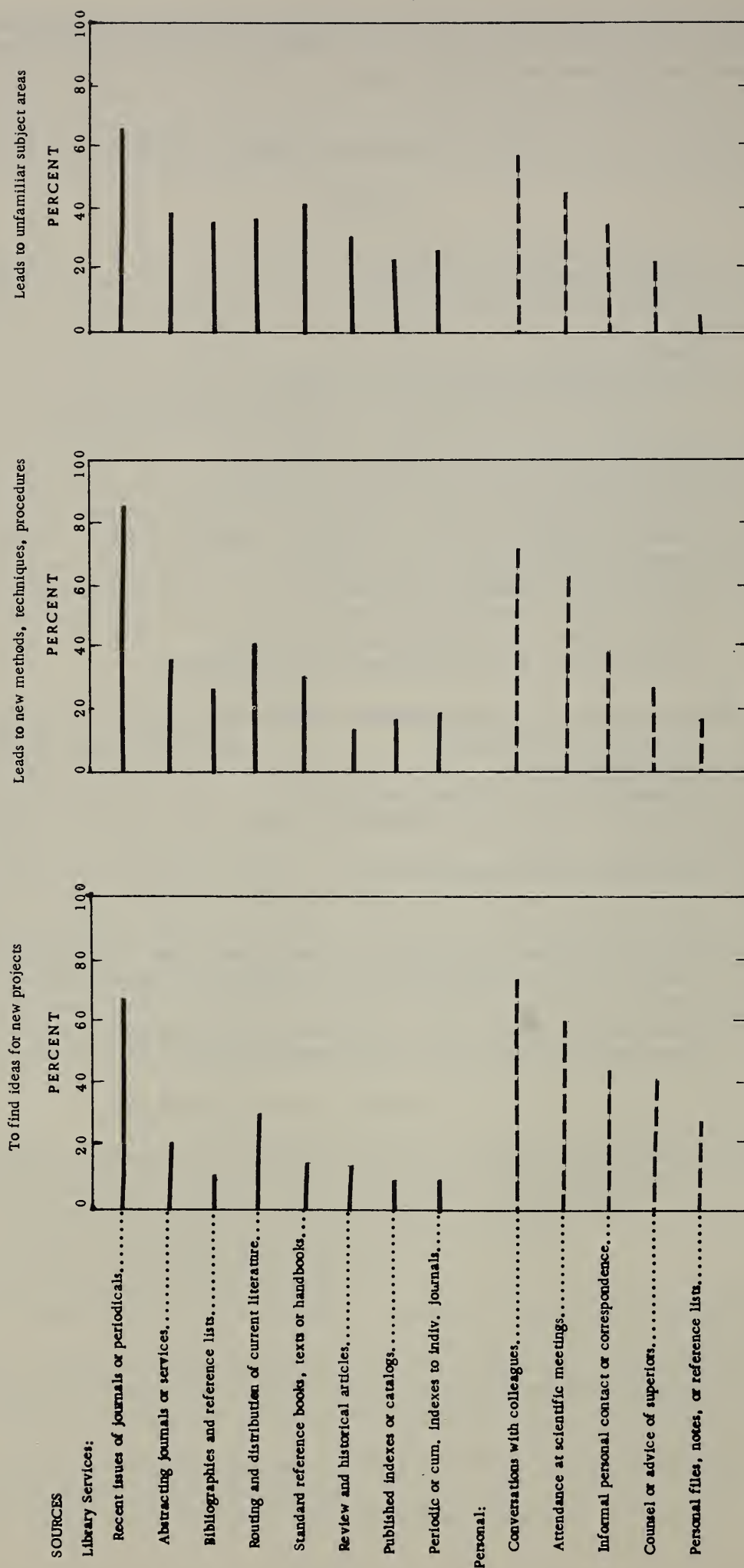
## LISTS OF CHARTS AND STATISTICAL TABLES

### SOURCES

		Percentage of Respondents marking each Source:
Fig.	R1	Selected sources for questions 2, 4, 5
	R2	Selected sources for questions 3, 6, 9
		Rank Percentage:
Fig.	R3	Composite rank rating of sources for 7 questions
	R4	Rank percentage score for question 1 -- Sources available and use most.
		Percentage of Respondents marking each source:
Fig.	R5	Sources leading to ideas for new projects -- Question 2
	R6	To begin a retrospective search -- Question 3
	R7	Leads to new methods, techniques, procedures -- Question 4
	R8	Leads to unfamiliar subject areas -- Question 5
	R9	To find historical material -- Question 6
	R10	To find out prior to publication -- Question 7
	R11	To keep abreast of scientific publication -- Question 9
	R12	Sources tried, but found to be of little value -- Question 10
Table	R13	Rank percentage score for composite and Question 1
	R14	Source rank for each Question
	R15	All respondents
	R16	Comparison of Junior and Senior Scientists
	R17	Comparison of Field and D.C. -Beltsville Scientists
Exhibit	R18	Identification of Sources and Questions
Table	R19	Ways of gaining access to information - percent of total responses for each source - - all questions
	R20	Number of responses - All grades and all areas, grades, areas - - all questions
	R21-R30	Number of Responses and percentages by area and grade for question 1-10
Exhibit	R31	Specialties List showing number of responses for each specialty
	R32	Specialties List showing field of interest sorted by rank

FIG. R 1

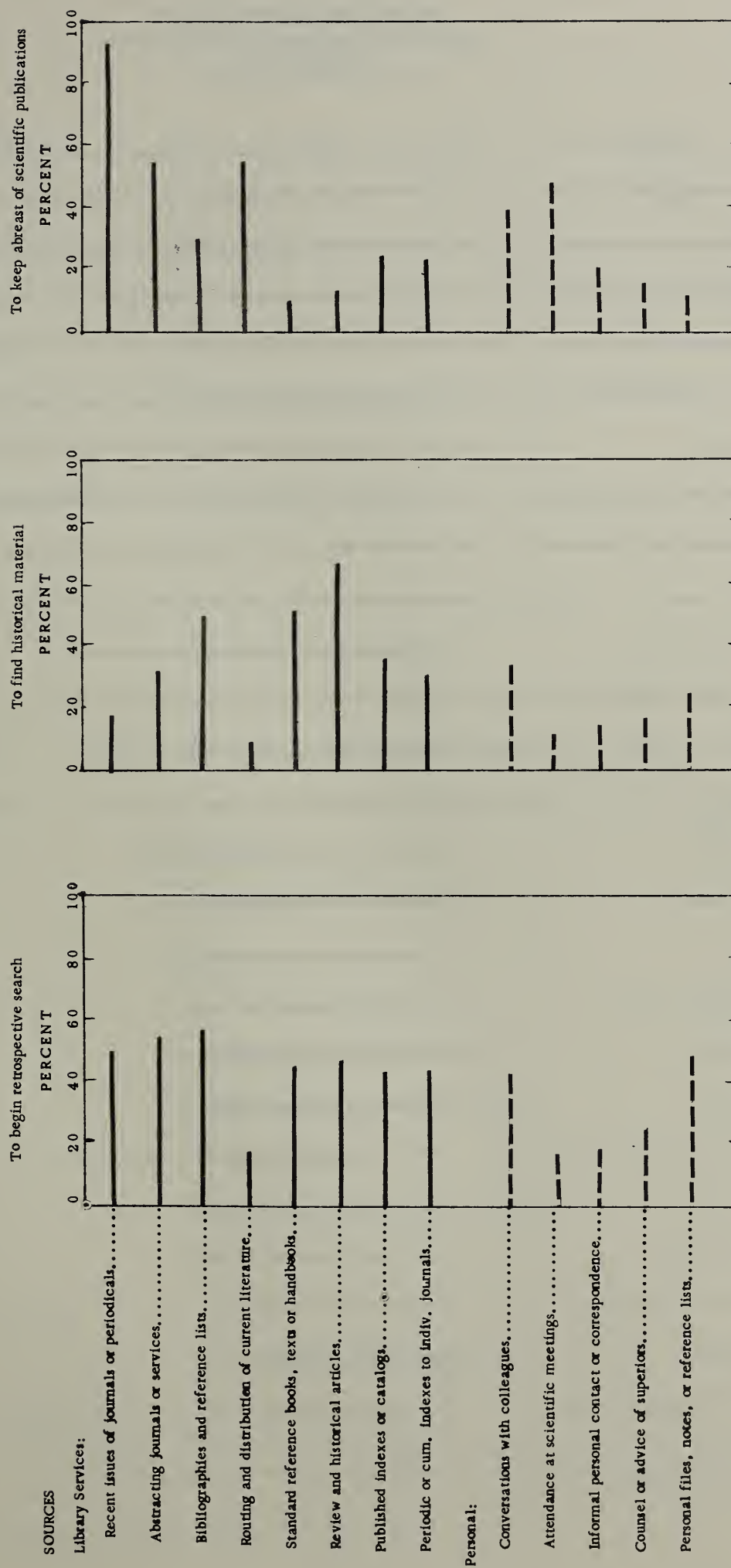
SOURCES OF INFORMATION  
TO MEET NEEDS OF USDA SCIENTISTS  
Percentage of Respondents Marking each Source





SOURCES OF INFORMATION  
TO MEET NEEDS OF USDA SCIENTISTS  
Percentage of Respondents Marking each Source

FIG. R 2



**INQUIRY ON REQUIREMENTS**  
 Composite Rating of Sources for 7 questions;  
 2 thru 7 and 9.  
 Highest possible score = 100 1

Fig. R 3



1 / 100 represents rank 1 for all 7 questions. For each question rank 1 assigned to the source with the highest number of responses.



**INQUIRY ON REQUIREMENTS**  
Sources available and used most, question 1.  
Rank 1 = 100 1/

Fig. R 4



1/ Rank 1 assigned to the source with the highest number of responses.

# INQUIRY ON REQUIREMENTS LEADS TO NEW MATERIALS

Question 2. Through which sources have you found ideas for new projects or investigations?

Percentage of respondents marking each source.





## RETROSPECTIVE

Question 3. What sources have been most useful to you when beginning a retrospective search for information pertinent to a project or subject area?

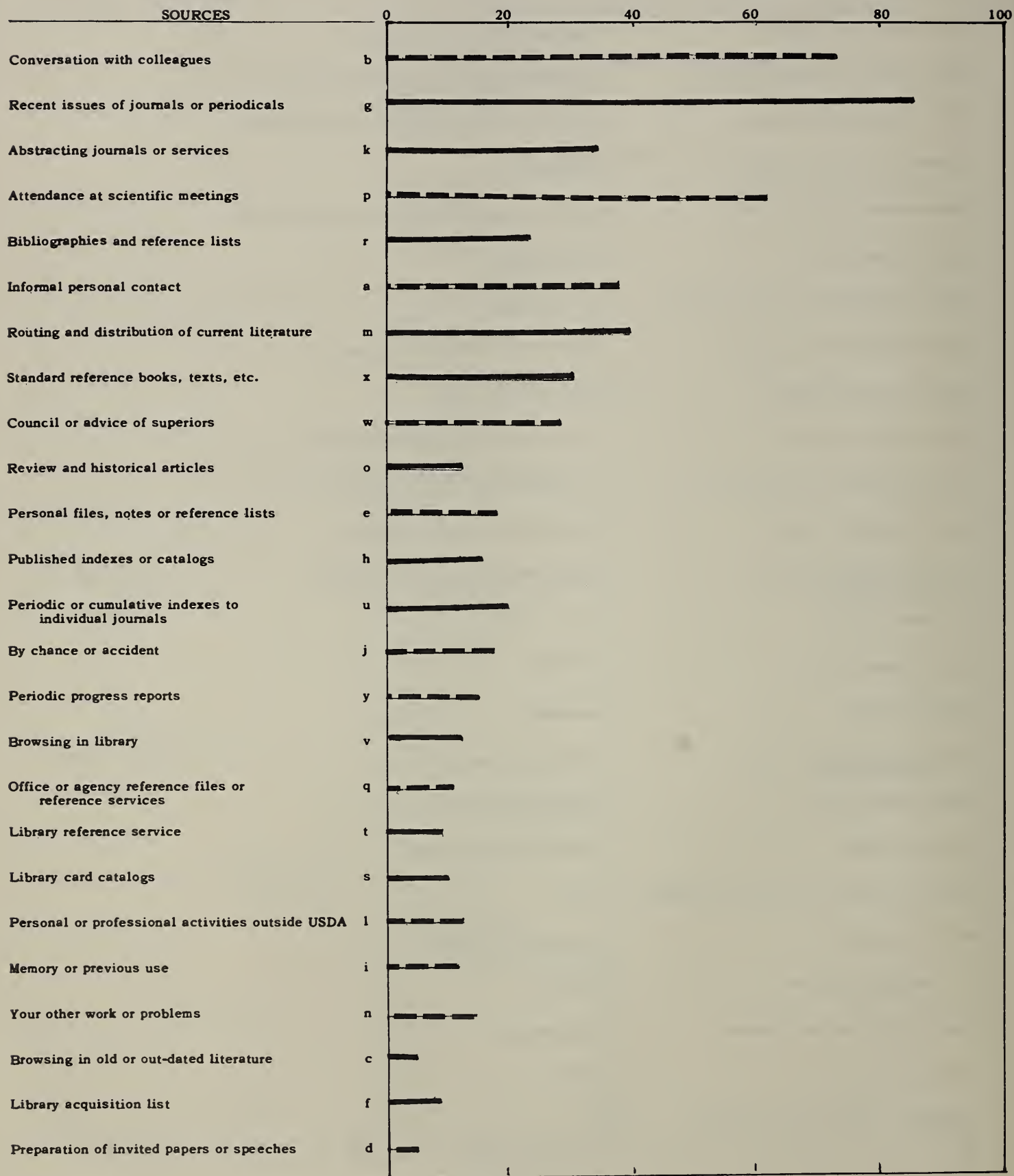
Percentage of respondents marking each source.



# INQUIRY ON REQUIREMENTS LEADS TO NEW MATERIALS

Question 4. What sources have led you to new and useful information about methods, techniques or procedures?

Percentage of respondents marking each source.



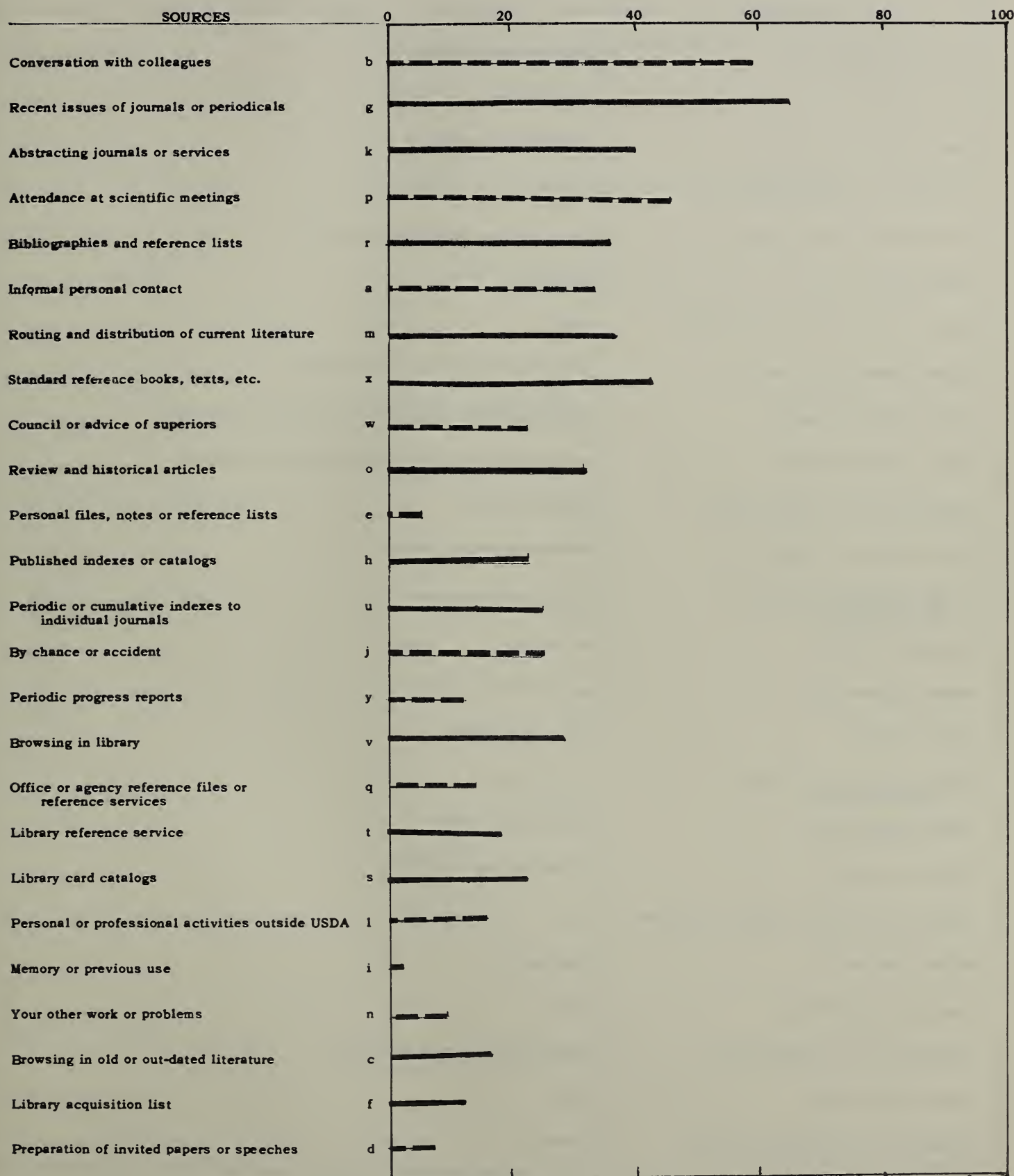


# INQUIRY ON REQUIREMENTS LEADS TO NEW MATERIALS

Fig. R 8

Question 5. What sources have led you to information in previously unfamiliar subject areas

Percentage of respondents marking each source.

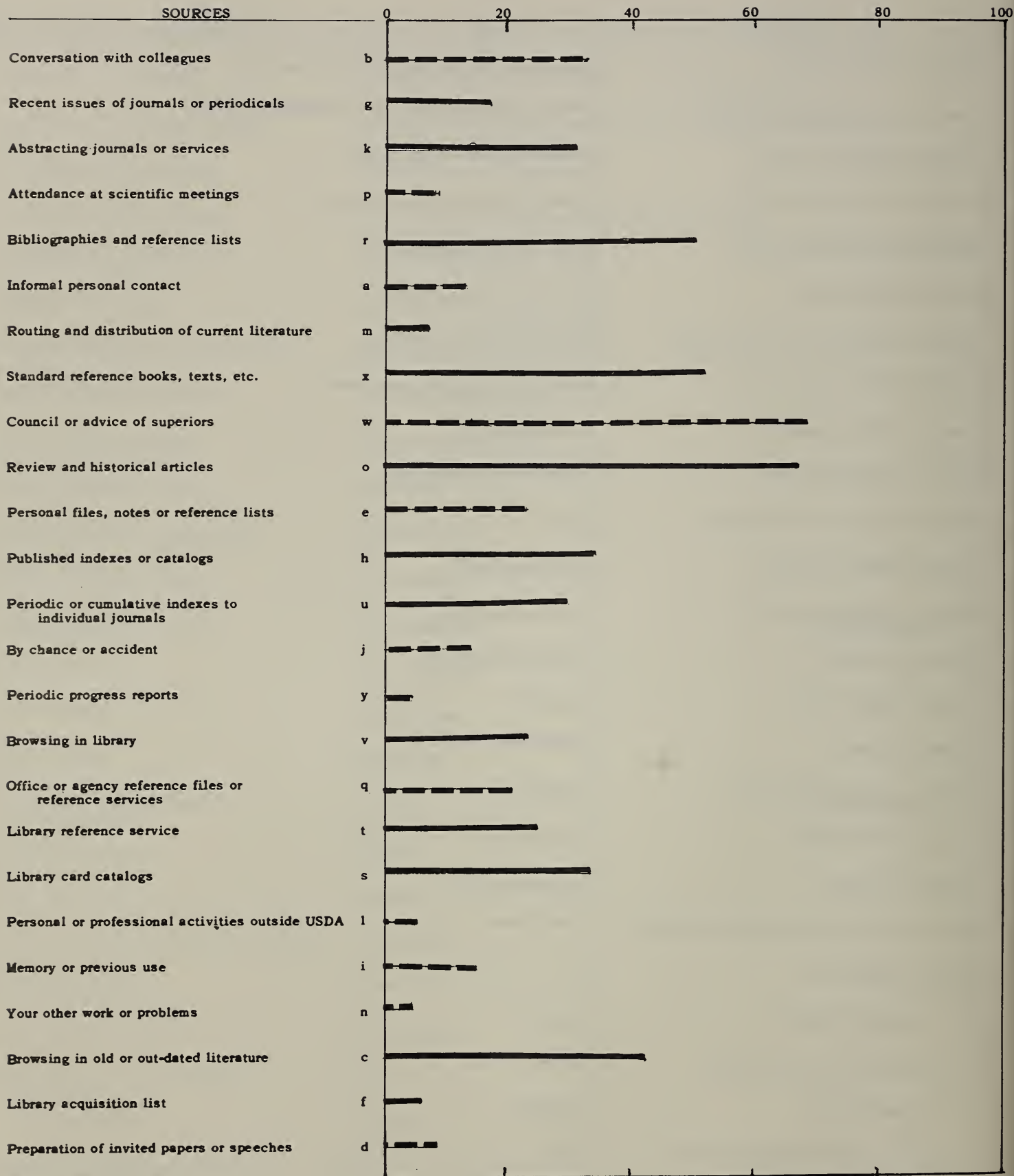


INQUIRY ON REQUIREMENTS  
RETROSPECTIVE

Fig. R 9

Question 6. What sources have helped you to find useful historical material?

Percentage of respondents marking each source.



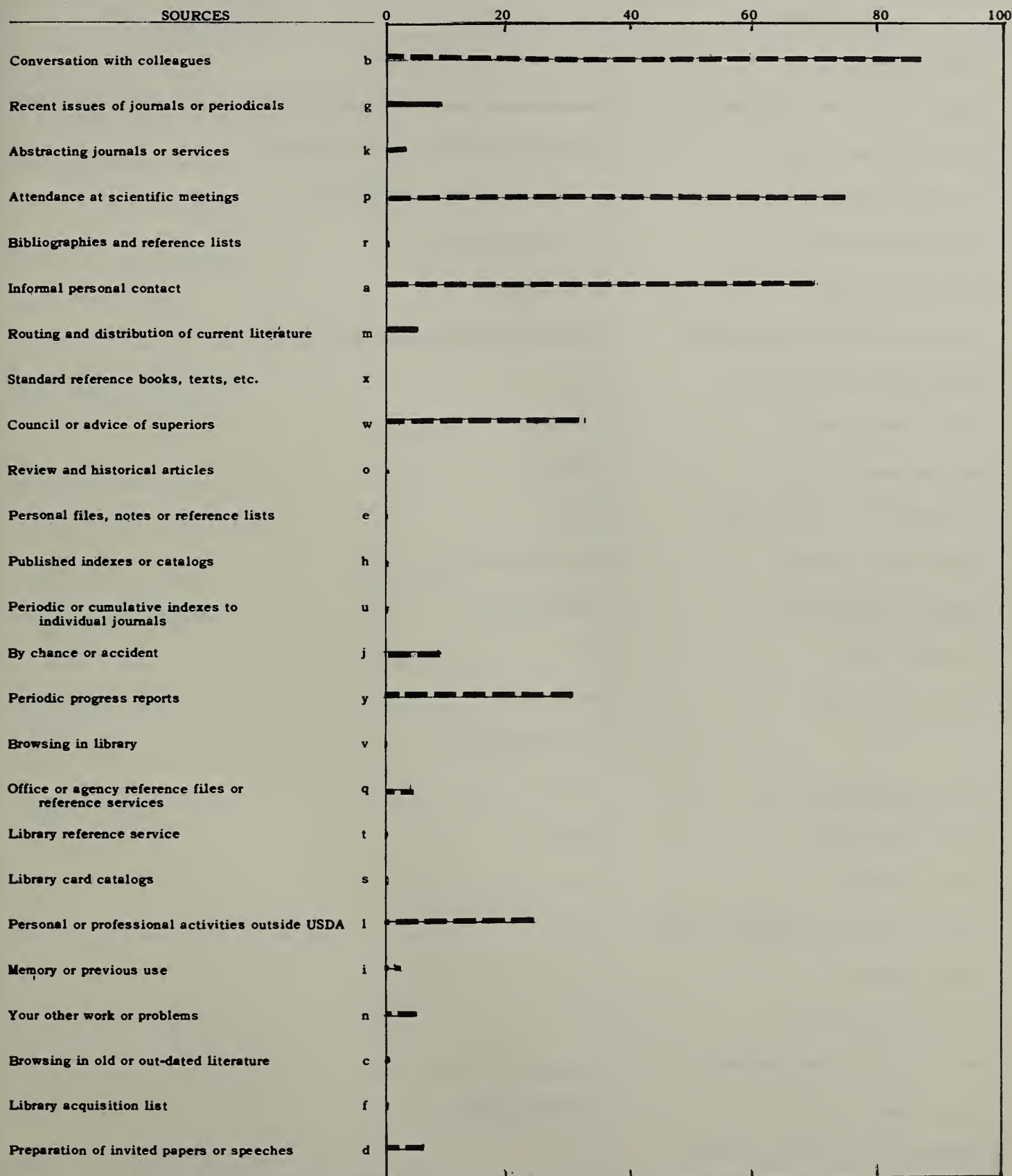


**INQUIRY ON REQUIREMENTS  
BEFORE RESULTS PUBLISHED**

Fig. R 10

Question 7. Through what sources have you found out about work of other scientists pertinent to your own research before their results were published?

Percentage of respondents marking each source.



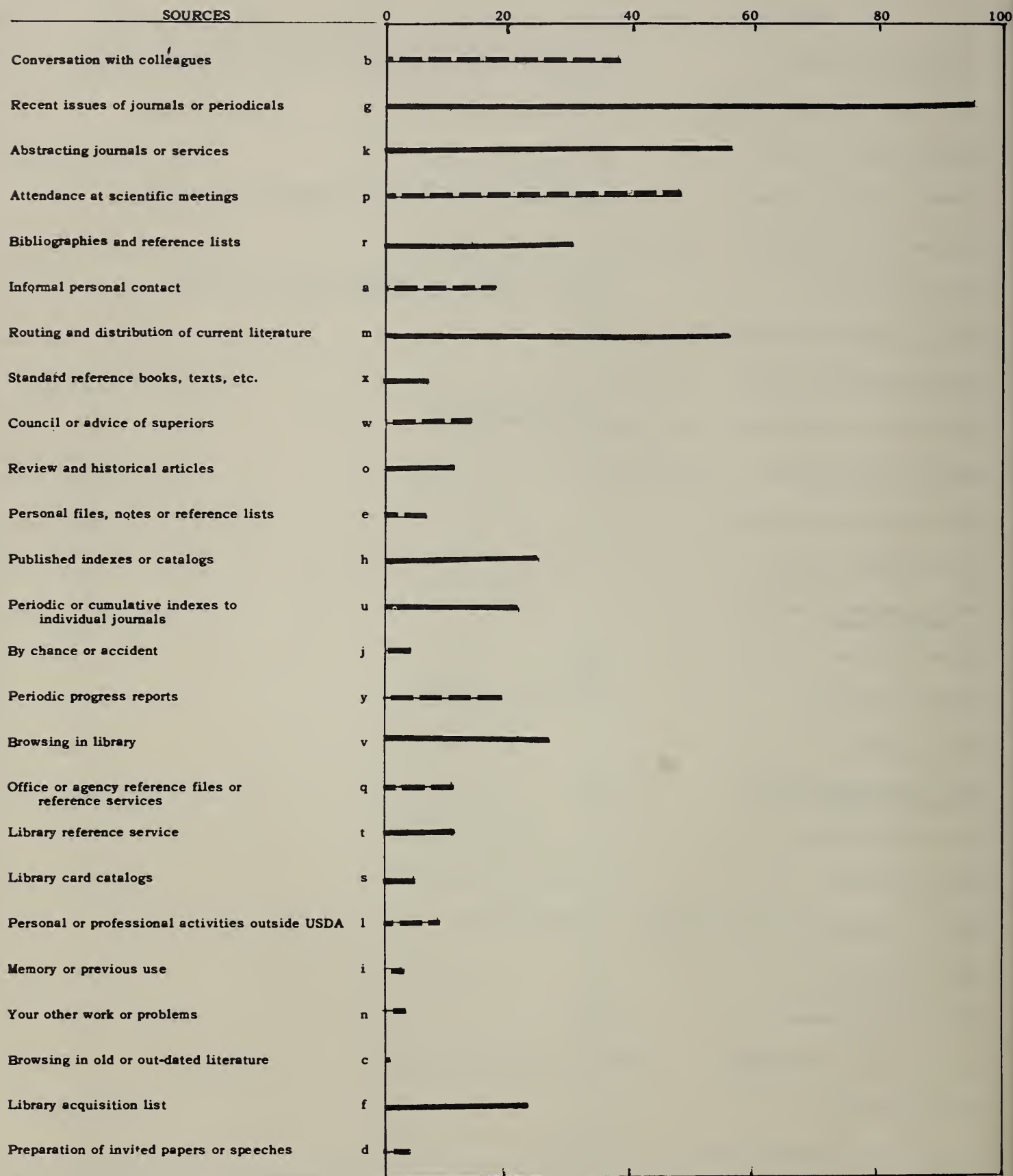
# INQUIRY ON REQUIREMENTS

## TO KEEP ABREAST

Fig. R 11

Question 9. Upon which sources do you most rely for keeping currently abreast of scientific publications in your area of interest or research?

Percentage of respondents marking each source.





# INQUIRY ON REQUIREMENTS

QF LITTLE VALUE

Fig. R 12

Question 10. Which sources (if any) have you tried to use but found to be of little value for finding information important to your research ?

Percentage of respondents marking each source



REQUIREMENTS INQUIRY

Table R13

Composite Rank Percentage Score		Source Rank for Each Question										
Q1	Q2-7&9	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q9	Q10		
Sources												
96	89	b.	Conversations with colleagues	2	1	8	2	2	7	1	5	24
100	87	g.	Recent issues of journals	1	2	3	1	1	14	8	1	25
84	77	k.	Abstracting journals or services	5	10	2	6	5	8	14	2	18
88	74	p.	Attendance at scientific meetings	4	3	18	3	3	19	2	4	22
72	70	r.	Bibliographies and reference lists	8	17	1	9	7	3	16	6	15
68	66	a.	Informal personal contact	9	5	16	5	8	18	3	11	19
80	65	m.	Routing & distribution of current literature	6	7	17	4	6	21	10	3	14
92	62	x.	Standard reference books	3	14	6	7	4	2	21	19	11
56	62	w.	Counsel or advice of superiors	12	4	14	8	15	16	4	13	12
32	57	o.	Review and historical articles	18	15	5	16	9	1	22	15	20
76	54	e.	Personal files, notes, or reference lists	7	8	4	11	24	11	12	18	23
64	53	h.	Published indexes or catalogs	10	22	9	14	14	5	18	7	9
60	53	u.	Periodic or cumulative indexes to individual journals	11	20	7	10	11	9	24	9	17
12	45	j.	By chance or accident	23	9	24	12	12	17	7	22	5
36	43	y.	Periodic progress reports	17	12	20	13	21	25	5	10	10
24	40	v.	Browsing in library	20	16	19	18	10	12	25	12	3
28	39	q.	Office or agency ref. files	19	21	11	20	19	13	13	16	6
44	39	t.	Library reference services	15	23	12	22	16	10	17	14	7
48	38	s.	Library card catalogs	14	25	10	21	13	6	20	20	2
20	37	l.	Activities outside USDA	21	13	23	17	18	23	6	17	8
52	34	i.	Memory or previous use	13	11	13	19	25	15	15	24	16
4	34	n.	Your other work or problems	25	6	21	15	22	24	11	23	21
8	32	c.	Browsing in old or out-dated lit.	24	18	15	24	17	4	23	25	1
40	25	f.	Library acquisition list	16	24	22	23	20	22	19	8	4
16	23	d.	Preparation of invited papers or speeches	22	19	25	25	23	20	19	21	13

100 represents rank 1 for all 7 questions

Sources listed in order of importance of composite percentage score.



Proportion of Scientists in the Sample Marking a  
Source to Meet Various Information Requirements

Requirements for Access to Pubs.	All Respondents						
	Leads to New Materials			Retrospective		To Keep Abreast of Scientific Pubs. (Q9)	To Find Out About Research Prior to Publication (Q7)
Sources:	Ideas for New Projects (Q2)	Leads to New Methods Techniques (Q4)	Leads to Unfamiliar Subject Areas (Q5)	To Begin Search in a Project (Q3)	To find Historical Materials (Q6)		
<b>Library Services:</b>							
Recent issues of journals or periodicals (g)	67	85	63	52	16	93	7
Abstracting journals or services (k)	20	35	39	54	29	54	2
Bibliographies and reference list (r)	9	23	34	56	48	29	1
Routing and distribution of current literature (m)	29	39	35	15	6	54	4
Standard reference books texts, or handbooks (x)	14	30	41	43	50	6	1
Review and historical articles (o)	13	12	30	45	65	10	1
Published indexes or catalogs (h)	6	14	21	40	33	23	1
Periodic or cumulative indexes to individual journals (u)	8	19	24	43	28	21	1
Browsing in library (v)	12	11	27	11	21	14	1
Library reference services (t)	5	9	17	25	23	10	1
Library card catalogs (s)	2	9	21	30	32	4	1
Browsing in old or out- dated literature (c)	9	4	16	16	41	0	1
Library acquisition list (f)	4	7	11	7	5	22	1
<b>Personal:</b>							
Conversation with colleagues (b)	75	72	57	40	31	37	85
Attendance at scientific and technical meetings (p)	61	61	44	13	8	46	73
Informal personal contact (a)	41	37	32	15	12	17	68
Counsel or advice of superiors (w)	42	28	21	22	13	13	30
Personal files, notes, or reference (e)	26	17	5	46	22	8	3
By chance or accident (j)	24	16	24	3	13	3	8
Periodic progress reports (y)	17	14	11	10	3	18	29
Office or agency re- ference files or services (q)	7	10	13	25	19	10	3
Personal or professional activities outside USDA (l)	17	12	14	5	4	8	22
Memory or previous use (i)	20	11	2	25	14	2	1
Your other work or problems (n)	37	13	8	10	3	2	4
Preparation of invited papers or speeches (d)	8	4	6	2	7	3	5

Proportion of Scientists in the Sample Marking a  
Source to Meet Various Information Requirements

Requirements for Access to Pubs.  Sources:	Comparison of Junior and Senior Scientists													
	Leads to New Materials						Retrospective							
	Ideas for New Projects (Q2)		Leads to New Methods Techniques (Q4)		Leads to Unfamiliar Subject Areas (Q5)		To Begin Search in a Project (Q3)		To find Historical Material (Q6)		To Keep Abreast of Scientific Pubs. (Q9)		To Find Out About Research Prior to Publication (Q7)	
	Jr.	Sr.	Jr.	Sr.	Jr.	Sr.	Jr.	Sr.	Jr.	Sr.	Jr.	Sr.	Jr.	Sr.
<b>Library Services:</b>														
Recent issues of journals or periodicals (g)	64	70	85	85	64	63	55	50	17	15	93	92	7	7
Abstracting journals or services (k)	17	22	32	37	40	38	53	56	28	31	53	55	2	2
Bibliographies and reference list (r)	10	8	22	24	34	34	56	56	47	49	30	28	1	2
Routing and distribution of current literature (m)	29	30	39	39	39	31	17	13	6	6	56	52	5	4
Standard reference books texts, or handbooks (x)	15	13	32	28	40	41	44	43	46	52	6	5	1	1
Review and historical articles (o)	12	15	12	12	29	30	40	48	63	67	10	10	1	0
Published indexes or catalogs (h)	6	5	15	13	23	19	44	37	34	32	25	21	1	1
Periodic or cumulative indexes to individual journals (u)	11	6	21	17	26	21	48	39	28	28	25	18	1	0
Browsing in library (v)	11	13	9	12	27	27	11	10	22	20	14	14	0	1
Library reference services (t)	7	3	9	8	18	15	28	21	26	21	12	8	2	0
Library card catalogs (s)	3	1	9	9	21	21	35	27	33	32	6	3	1	0
Browsing in old or out- dated literature (c)	10	8	5	4	16	16	16	17	41	41	0	0	1	0
Library acquisition list (f)	4	4	9	6	12	10	9	6	6	4	23	20	1	1
<b>Personal:</b>														
Conversation with colleagues (b)	75	76	70	72	58	56	43	38	29	33	37	37	84	86
Attendance at scientific & technical meetings (p)	52	68	55	66	42	46	12	14	8	8	41	50	67	77
Informal personal contact (a)	38	44	34	40	29	34	15	14	12	12	16	18	62	74
Counsel or advice of superiors (w)	52	34	36	21	24	18	29	15	16	11	17	10	35	25
Personal files, notes, or reference (e)	25	27	18	16	6	5	43	49	22	21	11	6	4	2
By chance or accident (j)	25	24	18	15	25	22	5	1	17	10	4	2	6	10
Periodic progress reports (y)	16	19	12	16	9	12	11	10	3	3	19	17	29	29
Office or agency re- ference files or services (q)	6	7	11	9	12	13	25	25	19	18	11	9	3	3
Personal or professional activities outside USDA (l)	13	19	11	13	12	15	5	5	5	3	7	9	18	25
Memory or previous use (i)	20	20	13	9	3	1	23	26	12	16	2	1	1	1
Your other work or problems (n)	34	40	11	14	8	9	10	10	4	3	2	2	4	5
Preparation of invited papers or speeches (d)	5	11	2	5	5	7	1	3	6	9	2	4	4	6

NOTE: For each Source, the First Line is for Junior scientists and the Second Line for senior scientists.



Proportion of Scientists in the Sample Marking a  
Source to Meet Various Information Requirements

Requirements for Access to Pubs.	Comparison of Field and D. C.-Beltsville Scientists													
	Leads to New Materials							Retrospective						
	Ideas for New Projects (Q2)		Leads to New Methods Techniques (Q4)		Leads to Unfamiliar Subject Areas (Q5)		To Begin Search in a Project (Q3)		To Find Historical Material (Q6)		To Keep Abreast of Scientific Pubs. F (Q9)		To Find Out About Research Prior to Publication F (Q7)	
Sources:	Field	DC	Field	DC	Field	DC	Field	DC	Field	DC	Field	DC	Field	DC
<b>Library Services:</b>														
Recent issues of journals or periodicals (g)	69		87		63		54		16		95		6	
		61		78		64		47		15		87		11
Abstracting journals or service (k)	21		37		42		58		30		59		1	
		16		27		29		42		27		38		4
Bibliographies and reference list (r)	10		22		33		57		46		28		1	
		8		25		36		52		56		31		4
Routing and distribution of current literature (m)	29		40		35		15		6		54		4	
		32		34		33		14		6		54		7
Standard reference books texts, or handbooks (x)	14		29		41		45		48		5		1	
		13		32		39		38		55		9		1
Review and historical articles (o)	13		13		29		44		66		9		1	
		15		10		30		46		66		13		1
Published indexes or catalogs (h)	5		13		21		41		32		23		1	
		8		16		19		36		41		25		1
Periodic or cumulative indexes to individual journals (u)	9		20		24		46		27		21		0	
		6		14		21		33		31		23		1
Browsing in library (v)	12		11		27		10		21		13		0	
		13		10		28		13		22		15		1
Library reference services (t)	5		9		17		24		22		11		1	
		4		8		16		26		29		9		1
Library card catalogs (s)	1		8		20		29		29		4		1	
		5		11		25		27		46		7		2
Browsing in old or out- dated literature (c)	9		5		17		18		41		0		1	
		7		3		13		10		41		1		1
Library acquisition list (f)	4		8		11		8		5		23		1	
		3		6		8		6		5		16		1
<b>Personal:</b>														
Conversation with colleagues (b)	77		73		57		39		31		38		86	
		70		66		56		44		33		34		82
Attendance at scientific & technical meetings (p)	63		63		45		14		9		49		76	
		54		54		41		8		7		38		60
Informal personal contact (a)	43		37		32		14		13		17		67	
		36		35		30		17		9		15		72
Counsel or advice of superiors (w)	43		29		20		21		13		13		31	
		40		25		23		23		14		14		24
Personal files, notes, or reference (e)	26		18		5		44		22		8		4	
		26		13		6		53		21		10		2
By chance or accident (j)	26		17		24		3		14		2		6	
		17		13		22		3		8		5		13
Periodic progress reports (y)	18		16		11		11		3		19		31	
		15		8		9		7		1		13		22
Office or agency re- ference files or services (q)	5		8		11		22		15		9		3	
		12		15		19		36		31		15		4
Personal or professional activities outside USDA (l)	16		12		13		5		4		8		21	
		18		13		16		7		3		8		24
Memory or previous use (i)	20		11		2		24		12		1		1	
		20		10		0		28		20		3		1
Your other work or problems (n)	37		13		8		9		3		2		3	
		39		12		11		13		6		3		8
Preparation of invited papers or speeches (d)	8		4		6		2		7		3		6	
		8		3		7		1		9		3		3

NOTE: For each Source the First Line is for scientists Located in the Field and the Second Line for D. C.-Beltsville.





## SUMMARY OF INQUIRY ON REQUIREMENTS OF USDA RESEARCH WORKERS

## Ways of Gaining Access to Information as Related to a Particular Source

(Total responses for each source equal 100 percent)

Sources <u>1/</u>	Rank <u>2/</u>	Total Responses (100 o/o)	Percent of Total Responses for each Source							
			Question Number <u>1/</u>							
			1	2	3	4	5	6	7	9
a	5	2076	18	15	6	14	12	4	25	6
b	2	3640	15	16	9	15	12	7	18	8
c	21	796	16	9	16	4	15	39	1	0
d	25	423	35	15	3	7	12	13	9	6
e	11	1418	29	14	26	9	3	12	2	5
f	24	639	31	5	9	9	13	6	1	26
g	1	3718	19	14	11	18	13	3	1	21
h	13	1388	22	3	23	8	12	18	1	13
i	19	851	31	18	23	10	2	13	1	2
j	20	831	15	23	3	15	22	12	7	3
k	4	2254	18	7	19	12	14	10	1	19
l	22	785	19	16	5	12	14	4	22	8
m	8	1848	24	12	6	16	15	2	2	23
n	23	733	15	40	11	14	9	4	5	2
o	10	1557	12	7	22	6	15	33	0	5
p	3	2873	17	16	4	17	12	2	19	13
q	18	864	22	6	23	9	12	16	3	9
r	6	1936	19	4	22	9	14	19	1	12
s	14	1021	24	2	23	7	16	24	1	3
t	17	897	22	4	22	8	14	20	1	9
u	12	1418	21	4	25	10	13	15	0	12
v	16	926	19	10	9	9	24	17	0	12
w	9	1610	18	20	11	14	10	6	14	7
x	7	1928	25	6	18	12	17	20	0	2
y	15	990	20	14	8	11	8	2	23	14
No Answer		89	1	13	7	4	11	26	34	4

1/ See Exhibit R18 for identification of sources and questions2/ Rank determined by Total Responses for each source3/ For each source this is the total of responses to questions 1 thru 7 and 9. Sources do not apply to question 8. Question 10 is omitted from the total as it is the negative, that is, sources of little value

## Number of Responses

## ALL GRADES AND ALL AREAS

Question no. <sup>1/</sup>	1	2	3	4	5	6	7	9	10
Sources									
a.	359	321	116	290	246	92	520	132	21
b.	557	586	316	562	444	237	649	289	5
c.	126	68	128	33	123	313	4	1	133
d.	146	64	13	29	50	56	40	25	38
e.	426	202	362	132	41	165	24	66	14
f.	202	29	57	57	83	36	6	169	85
g.	717	522	411	671	493	122	53	729	3
h.	317	43	314	108	162	256	7	181	48
i.	276	154	193	84	14	107	10	13	27
j.	127	187	24	127	184	100	60	22	77
k.	429	154	427	273	305	226	15	425	22
l.	151	129	40	94	106	32	167	66	49
m.	428	229	114	304	270	46	34	423	35
n.	122	290	79	100	66	26	34	16	19
o.	192	105	350	95	231	500	5	79	21
p.	494	472	101	480	345	64	554	363	15
q.	192	53	196	79	100	142	23	79	65
r.	373	72	439	180	264	370	10	228	31
s.	243	17	239	69	164	248	6	35	99
t.	202	36	193	68	129	179	9	81	54
u.	303	63	336	146	185	214	4	167	24
v.	179	93	83	87	210	161	4	109	92
w.	297	330	170	220	161	101	226	105	45
x.	499	110	341	233	316	380	5	44	47
y.	200	136	82	113	82	20	219	138	48
No response	1	12	6	4	10	23	29	4	393

<sup>1/</sup> See Exhibit R18 for identification of sources and questions



## Number of Responses

Question no. 1/ Sources	1	2	3	4	5	6	7	9	10
				FIELD					
a.	275	256	86	226	193	77	398	104	19
b.	439	460	236	443	344	184	510	228	3
c.	104	56	109	28	100	247	3		109
d.	116	50	12	23	38	42	35	20	31
e.	323	156	266	108	30	132	21	48	14
f.	170	23	47	46	68	28	5	140	68
g.	555	412	326	529	379	98	35	571	1
h.	247	29	249	79	129	191	5	136	40
i.	208	119	142	66	14	75	8	7	22
j.	100	157	19	104	144	87	38	13	56
k.	350	125	351	224	254	183	8	356	13
l.	120	97	28	70	78	27	127	51	38
m.	330	172	89	243	212	36	23	325	24
n.	92	220	56	78	46	17	20	10	16
o.	144	79	267	76	177	395	3	55	17
p.	398	375	87	383	272	53	452	293	12
q.	129	32	131	51	67	93	17	52	56
r.	296	57	344	135	200	280	4	171	22
s.	180	8	172	49	120	175	3	23	75
t.	160	28	146	54	101	132	8	64	44
u.	243	52	276	121	147	164	2	126	18
v.	131	69	60	68	160	126	2	81	68
w.	231	259	129	174	120	79	185	79	34
x.	390	86	273	175	246	292	4	28	38
y.	162	110	69	98	66	18	182	115	36
No response	1	7	3	1	4	20	14	2	299

## WASHINGTON, D. C. -BELTSVILLE

a.	84	65	30	64	53	15	122	28	2
b.	118	126	80	119	100	53	139	61	2
c.	22	12	19	5	23	66	1	1	24
d.	30	14	1	6	12	14	5	5	7
e.	103	46	96	24	11	33	3	18	
f.	32	6	10	11	15	8	1	29	17
g.	162	110	85	142	114	24	18	158	2
h.	70	14	65	29	33	65	2	45	8
i.	68	35	51	18		32	2	6	5
j.	27	30	5	23	40	13	22	9	21
k.	79	29	76	49	51	43	7	69	9
l.	31	32	12	24	28	5	40	15	11
m.	98	57	25	61	58	10	11	98	11
n.	30	70	23	22	20	9	14	6	3
o.	48	26	83	19	54	105	2	24	4
p.	96	97	14	97	73	11	102	70	3
q.	63	21	65	28	33	49	6	27	9
r.	77	15	95	45	64	90	6	57	9
s.	63	9	67	20	44	73	3	12	24
t.	42	8	47	14	28	47	1	17	10
u.	60	11	60	25	38	50	2	41	6
v.	48	24	23	19	50	35	2	28	24
w.	66	71	41	46	41	22	41	26	11
x.	109	24	68	58	70	88	1	16	9
y.	38	26	13	15	16	2	37	23	12
No response		5	3	3	6	3	15	2	94

1/ See Exhibit R18 for identification of sources and questions

## SUMMARY OF INQUIRY ON REQUIREMENTS OF USDA RESEARCH WORKERS (CONT.) TABLE R20

Question no. 1/ Sources	Number of Responses								
	1	2	3	4	5	6	7	9	10
	JUNIOR - GRADES 7 - 11								
a.	153	134	55	122	104	43	211	57	13
b.	259	265	153	255	210	102	286	134	3
c.	66	36	57	17	57	145	2		62
d.	44	18	2	9	19	20	15	8	20
e.	196	89	154	64	20	78	14	40	3
f.	101	14	31	31	43	20	3	83	32
g.	327	228	197	309	229	59	23	338	
h.	164	22	157	53	83	123	3	91	16
i.	131	70	84	46	10	43	5	7	15
j.	70	87	19	64	90	59	20	15	39
k.	196	61	189	117	145	100	6	191	8
l.	58	47	17	40	44	18	61	26	28
m.	193	103	60	140	141	23	17	203	13
n.	52	120	36	40	29	14	12	9	13
o.	90	42	145	44	104	226	3	35	6
p.	200	185	43	199	151	30	229	149	7
q.	92	22	91	39	44	69	11	41	27
r.	177	37	200	80	123	168	3	110	7
s.	128	11	124	32	75	118	4	21	46
t.	113	25	102	33	66	92	7	45	24
u.	160	39	171	76	95	99	2	89	10
v.	83	39	40	34	97	77	1	50	42
w.	177	185	105	129	87	57	120	63	17
x.	245	55	157	116	145	165	2	22	22
y.	87	57	39	44	31	9	98	67	17
No response	1	9	5	2	4	7	23	2	187
	SENIOR - GRADES 12 and over								
a.	206	187	61	168	142	49	309	75	8
b.	298	321	163	307	234	135	363	155	2
c.	60	32	71	16	66	168	2	1	71
d.	102	46	11	20	31	36	25	17	18
e.	230	113	208	68	21	87	10	26	11
f.	101	15	26	26	40	16	3	86	53
g.	390	294	214	362	264	63	30	391	3
h.	153	21	157	55	79	133	4	90	32
i.	145	84	109	38	4	64	5	6	12
j.	57	100	5	63	94	41	40	7	38
k.	233	93	238	156	160	126	9	234	14
l.	93	82	23	54	62	14	106	40	21
m.	235	126	54	164	129	23	17	220	22
n.	70	170	43	60	37	12	22	7	6
o.	102	63	205	51	127	274	2	44	15
p.	294	287	58	281	194	34	325	214	8
q.	100	31	105	40	56	73	12	38	38
r.	196	35	239	100	141	202	7	118	24
s.	115	6	115	37	89	130	2	14	53
t.	89	11	91	35	63	87	2	36	30
u.	143	24	165	70	90	115	2	78	14
v.	96	54	43	53	113	84	3	59	50
w.	120	145	65	91	74	44	106	42	28
x.	254	55	184	117	171	215	3	22	25
y.	113	79	43	69	51	11	121	71	31
No response		3	1	2	6	16	6	2	206

1/ See Exhibit R 18 for identification sources and questions



Question 1 - Which sources are or have been available to you and have you used most ?

Rank	Sources:	Number of Responses and Percentages by Area & Grade <sup>1/</sup>				
		Total	By Area		By Grade	
			Field	D. C. & Belts.	Junior 7-11	Senior 12 & over
1.	Recent issues of journals or periodicals	717 (91o/o)	555 (92o/o)	162 (88o/o)	327 (90o/o)	390 (92o/o)
2.	Conversations with colleagues	557 (71o/o)	439 (73o/o)	118 (64o/o)	259 (71o/o)	298 (70o/o)
3.	Standard reference books, texts, or handbooks	499 (63o/o)	390 (64o/o)	109 (59o/o)	245 (67o/o)	254 (60o/o)
4.	Attendance at scientific and technical meetings	494 (63o/o)	398 (66o/o)	96 (52o/o)	200 (55o/o)	294 (69o/o)
5.	Abstracting journals or services	429 (54o/o)	350 (58o/o)	79 (43o/o)	196 (54o/o)	233 (55o/o)
6.	Routing and distribution of current literature	428 (54o/o)	330 (55o/o)	98 (53o/o)	193 (53o/o)	235 (55o/o)
7.	Personal files, notes or reference lists	426 (54o/o)	323 (53o/o)	103 (56o/o)	196 (54o/o)	230 (54o/o)
8.	Bibliographies and reference lists	373 (47o/o)	296 (49o/o)	77 (42o/o)	177 (49o/o)	196 (46o/o)
9.	Informal personal contact or correspondence (other than with colleagues or at meetings)	359 (46o/o)	275 (45o/o)	84 (46o/o)	153 (42o/o)	206 (48o/o)
10.	Published indexes or catalogs	317 (40o/o)	247 (41o/o)	70 (38o/o)	164 (45o/o)	153 (36o/o)
11.	Periodic or cumulative indexes to individual journals or periodicals	303 (38o/o)	243 (40o/o)	60 (33o/o)	160 (44o/o)	143 (34o/o)
12.	Counsel or advice of superiors	297 (38o/o)	231 (38o/o)	66 (36o/o)	177 (49o/o)	120 (28o/o)
13.	Memory or previous use	276 (35o/o)	208 (34o/o)	68 (37o/o)	131 (36o/o)	145 (34o/o)
14.	Library card catalogs	243 (31o/o)	180 (30o/o)	63 (34o/o)	128 (35o/o)	115 (27o/o)
15.	Library reference services	202 (26o/o)	160 (26o/o)	42 (23o/o)	113 (31o/o)	89 (21o/o)
16.	Library acquisition lists	202 (26o/o)	170 (28o/o)	32 (17o/o)	101 (28o/o)	101 (24o/o)
17.	Periodic progress reports	200 (25o/o)	162 (27o/o)	38 (21o/o)	87 (24o/o)	113 (27o/o)
18.	Review and historical articles	192 (24o/o)	144 (24o/o)	48 (26o/o)	90 (25o/o)	102 (24o/o)
19.	Office or agency reference files or reference services	192 (24o/o)	129 (21o/o)	63 (34o/o)	92 (25o/o)	100 (23o/o)
20.	Browsing in library	179 (23o/o)	131 (22o/o)	48 (26o/o)	83 (23o/o)	96 (23o/o)
21.	Personal or professional activities outside USDA	151 (19o/o)	120 (20o/o)	31 (17o/o)	58 (16o/o)	93 (22o/o)
22.	Preparation of invited papers or speeches	146 (19o/o)	116 (19o/o)	30 (16o/o)	44 (12o/o)	102 (24o/o)
23.	By chance or accident (as while looking for something else)	127 (16o/o)	100 (17o/o)	27 (15o/o)	70 (19o/o)	57 (13o/o)
24.	Browsing in old or outdated literature	126 (16o/o)	104 (17o/o)	22 (12o/o)	66 (18o/o)	60 (14o/o)
25.	Your other work or problems	122 (15o/o)	92 (15o/o)	30 (16o/o)	52 (14o/o)	70 (16o/o)
	No Answer	1	1		1	1

<sup>1/</sup> Response to each source as percent of total respondents

Question 2 - Through which sources have you found ideas for new projects or investigations ?

Number of Responses and Percentages by Area & Grade 1/

Rank	Sources:	Total	By Area		By Grade	
			Field	D. C. & Belts.	Junior 7-11	Senior 12 & over
1.	Conversations with colleagues	586 (75o/o)	460 (77o/o)	126 (70o/o)	265 (75o/o)	321 (76o/o)
2.	Recent issues of journals or periodicals	522 (67o/o)	412 (69o/o)	110 (61o/o)	228 (64o/o)	294 (70o/o)
3.	Attendance at scientific and technical meetings	472 (61o/o)	375 (63o/o)	97 (54o/o)	185 (52o/o)	287 (68o/o)
4.	Counsel or advice of superiors	330 (42o/o)	259 (43o/o)	71 (40o/o)	185 (52o/o)	145 (34o/o)
5.	Informal personal contact or correspondence (other than with colleagues or at meetings)	321 (41o/o)	256 (43o/o)	65 (35o/o)	134 (38o/o)	187 (44o/o)
6.	Your other work or problems	290 (37o/o)	220 (37o/o)	70 (39o/o)	120 (34o/o)	170 (40o/o)
7.	Routing and distribution of current literature	229 (29o/o)	172 (29o/o)	57 (32o/o)	103 (29o/o)	126 (30o/o)
8.	Personal files, notes, or reference lists	202 (26o/o)	156 (26o/o)	46 (26o/o)	89 (25o/o)	113 (27o/o)
9.	By chance or accident (as while looking for something else)	187 (24o/o)	157 (26o/o)	30 (17o/o)	87 (25o/o)	100 (24o/o)
10.	Abstracting journals or services	154 (20o/o)	125 (21o/o)	29 (16o/o)	61 (17o/o)	93 (22o/o)
11.	Memory or previous use	154 (20o/o)	119 (20o/o)	35 (20o/o)	70 (20o/o)	84 (20o/o)
12.	Periodic progress reports	136 (17o/o)	110 (18o/o)	26 (15o/o)	57 (16o/o)	79 (19o/o)
13.	Personal or professional activities outside USDA	129 (17o/o)	97 (16o/o)	32 (18o/o)	47 (13o/o)	82 (19o/o)
14.	Standard reference books, texts, or handbooks	110 (14o/o)	86 (14o/o)	24 (13o/o)	55 (15o/o)	55 (13o/o)
15.	Review and historical articles	105 (13o/o)	79 (13o/o)	26 (15o/o)	42 (12o/o)	63 (15o/o)
16.	Browsing in library	93 (12o/o)	69 (12o/o)	24 (13o/o)	39 (11o/o)	54 (13o/o)
17.	Bibliographies and reference lists	72 (9o/o)	57 (10o/o)	15 (8o/o)	37 (10o/o)	35 (8o/o)
18.	Browsing in old or outdated literature	68 (9o/o)	56 (9o/o)	12 (7o/o)	36 (10o/o)	32 (8o/o)
19.	Preparation of invited papers or speeches	64 (8o/o)	50 (8o/o)	14 (8o/o)	18 (5o/o)	46 (11o/o)
20.	Periodic or cumulative indexes to individual journals or periodicals	63 (8o/o)	52 (9o/o)	11 (6o/o)	39 (11o/o)	24 (6o/o)
21.	Office or agency reference files or reference services	53 (7o/o)	32 (5o/o)	21 (12o/o)	22 (6o/o)	31 (7o/o)
22.	Published indexes or catalogs	43 (6o/o)	29 (5o/o)	14 (8o/o)	22 (6o/o)	21 (5o/o)
23.	Library reference services	36 (5o/o)	28 (5o/o)	8 (4o/o)	25 (7o/o)	11 (3o/o)
24.	Library acquisition list	29 (4o/o)	23 (4o/o)	6 (3o/o)	14 (4o/o)	15 (4o/o)
25.	Library card catalogs	17 (2o/o)	8 (1o/o)	9 (5o/o)	11 (3o/o)	6 (1o/o)
	No answer	12	7	5	9	3

1/ Response to each source as percent of total respondents



Question 3 - What sources have been most useful to you when beginning a retrospective search for information pertinent to a project or subject area ?

Number of Responses and Percentages by Area & Grade <sup>1/</sup>

Rank	Sources:	Total	By Area		By Grade	
			Field	D. C. & Belts.	Junior 7-11	Senior 12 & over
1.	Bibliographies and reference lists	439	344	95	200	239
		(56o/o)	(57o/o)	(52o/o)	(56o/o)	(56o/o)
2.	Abstracting journals or services	427	351	76	189	238
		(54o/o)	(58o/o)	(42o/o)	(53o/o)	(56o/o)
3.	Recent issues of journals or periodicals	411	326	85	197	214
		(52o/o)	(54o/o)	(47o/o)	(55o/o)	(50o/o)
4.	Personal files, notes, or reference lists	362	266	96	154	208
		(46o/o)	(44o/o)	(53o/o)	(43o/o)	(49o/o)
5.	Review and historical articles	350	267	83	145	205
		(45o/o)	(44o/o)	(46o/o)	(40o/o)	(48o/o)
6.	Standard reference books, texts, or handbooks	341	273	68	157	184
		(43o/o)	(45o/o)	(38o/o)	(44o/o)	(43o/o)
7.	Periodic or cumulative indexes to individual journals or periodicals	336	376	60	171	165
		(43o/o)	(46o/o)	(33o/o)	(48o/o)	(39o/o)
8.	Conversations with colleagues	316	236	80	153	163
		(40o/o)	(39o/o)	(44o/o)	(43o/o)	(38o/o)
9.	Published indexes or catalogs	314	249	65	157	157
		(40o/o)	(41o/o)	(36o/o)	(44o/o)	(37o/o)
10.	Library card catalogs	239	172	67	124	115
		(30o/o)	(29o/o)	(37o/o)	(35o/o)	(27o/o)
11.	Office or agency reference files or reference services	196	131	65	91	105
		(25o/o)	(22o/o)	(36o/o)	(25o/o)	(25o/o)
12.	Library reference services	193	146	47	102	91
		(25o/o)	(24o/o)	(26o/o)	(28o/o)	(21o/o)
13.	Memory or previous use	193	142	51	84	109
		(25o/o)	(24o/o)	(28o/o)	(23o/o)	(26o/o)
14.	Counsel or advice or superiors	170	129	41	105	65
		(22o/o)	(21o/o)	(23o/o)	(29o/o)	(15o/o)
15.	Browsing in old or out-dated literature	128	109	19	57	71
		(16o/o)	(18o/o)	(10o/o)	(16o/o)	(17o/o)
16.	Informal personal contact or correspondence (other than with colleagues or at meetings)	116	86	30	55	61
		(15o/o)	(14o/o)	(17o/o)	(15o/o)	(14o/o)
17.	Routing and distribution	114	89	25	60	54
		(15o/o)	(15o/o)	(14o/o)	(17o/o)	(13o/o)
18.	Attendance at scientific and technical meetings	101	87	14	43	58
		(13o/o)	(14o/o)	(8o/o)	(12o/o)	(14o/o)
19.	Browsing in library	83	60	23	40	43
		(11o/o)	(10o/o)	(13o/o)	(11o/o)	(10o/o)
20.	Periodic progress reports	82	69	13	39	43
		(10o/o)	(11o/o)	(7o/o)	(11o/o)	(10o/o)
21.	Your other work or problems	79	56	23	36	43
		(10o/o)	(9o/o)	(13o/o)	(10o/o)	(10o/o)
22.	Library acquisition list	57	47	10	31	26
		(7o/o)	(8o/o)	(6o/o)	(9o/o)	(6o/o)
23.	Personal or professional activities outside USDA	40	28	12	17	23
		(5o/o)	(5o/o)	(7o/o)	(5o/o)	(5o/o)
24.	By chance or accident (as while looking for something else)	24	19	5	19	5
		(3o/o)	(3o/o)	(3o/o)	(5o/o)	(1o/o)
25.	Preparation of invited papers or speeches	13	12	1	2	11
		(2o/o)	(2o/o)	(1o/o)	(1o/o)	(3o/o)
	No Answer	6	3	3	5	1

<sup>1/</sup> Response to each source as percent of total respondents

Question 4 - What sources have led you to new and useful information about methods, techniques or procedures ?

Number of Responses and Percentages by Area & Grade <sup>1/</sup>

Rank	Sources:	Number of Responses and Percentages by Area & Grade <sup>1/</sup>				
		Total	By Area		By Grade	
			Field	D. C. & Belts.	Junior 7-11	Senior 12 & over
1.	Recent issues of journals or periodicals	671 (85o/o)	529 (87o/o)	142 (78o/o)	309 (85o/o)	362 (85o/o)
2.	Conversations with colleagues	562 (72o/o)	443 (73o/o)	119 (66o/o)	255 (70o/o)	307 (72o/o)
3.	Attendance at scientific and technical meetings	480 (61o/o)	383 (63o/o)	97 (54o/o)	199 (55o/o)	281 (66o/o)
4.	Routing and distribution of current literature	304 (39o/o)	243 (40o/o)	61 (34o/o)	140 (39o/o)	164 (39o/o)
5.	Informal personal contact or correspondence (other than with colleagues or at meetings)	290 (37o/o)	226 (37o/o)	64 (35o/o)	122 (34o/o)	168 (40o/o)
6.	Abstracting journals or services	273 (35o/o)	224 (37o/o)	49 (27o/o)	117 (32o/o)	156 (37o/o)
7.	Standard reference books, texts, or handbooks	233 (30o/o)	175 (29o/o)	58 (32o/o)	116 (32o/o)	117 (28o/o)
8.	Counsel or advice of superiors	220 (28o/o)	174 (29o/o)	46 (25o/o)	129 (36o/o)	91 (21o/o)
9.	Bibliographies or reference lists	180 (23o/o)	135 (22o/o)	45 (25o/o)	80 (22o/o)	100 (24o/o)
10.	Periodic or cumulative indexes to individual journals or periodicals	146 (19o/o)	121 (20o/o)	25 (14o/o)	76 (21o/o)	70 (17o/o)
11.	Personal files, notes or reference lists	132 (17o/o)	108 (18o/o)	24 (13o/o)	64 (18o/o)	68 (16o/o)
12.	By chance or accident (as while looking for something else)	127 (16o/o)	104 (17o/o)	23 (13o/o)	64 (18o/o)	63 (15o/o)
13.	Periodic progress reports	113 (14o/o)	98 (16o/o)	15 (8o/o)	44 (12o/o)	69 (16o/o)
14.	Published indexes or catalogs	108 (14o/o)	79 (13o/o)	29 (16o/o)	53 (15o/o)	55 (13o/o)
15.	Your other work or problems	100 (13o/o)	78 (13o/o)	22 (12o/o)	40 (11o/o)	60 (14o/o)
16.	Review and historical articles	95 (12o/o)	76 (13o/o)	19 (10o/o)	44 (12o/o)	51 (12o/o)
17.	Personal or professional activities outside USDA	94 (12o/o)	70 (12o/o)	24 (13o/o)	40 (11o/o)	54 (13o/o)
18.	Browsing in library	87 (11o/o)	68 (11o/o)	19 (10o/o)	34 (9o/o)	53 (12o/o)
19.	Memory or previous use	84 (11o/o)	66 (11o/o)	18 (10o/o)	46 (13o/o)	38 (9o/o)
20.	Office or agency reference files or reference services	79 (10o/o)	51 (8o/o)	28 (15o/o)	39 (11o/o)	40 (9o/o)
21.	Library card catalogs	69 (9o/o)	49 (8o/o)	20 (11o/o)	32 (9o/o)	37 (9o/o)
22.	Library reference services	68 (9o/o)	54 (9o/o)	14 (8o/o)	33 (9o/o)	35 (8o/o)
23.	Library acquisition list	57 (7o/o)	46 (8o/o)	11 (6o/o)	31 (9o/o)	26 (6o/o)
24.	Browsing in old or out-dated literature	33 (4o/o)	28 (5o/o)	5 (3o/o)	17 (5o/o)	16 (4o/o)
25.	Preparation of invited papers or speeches	29 (4o/o)	23 (4o/o)	6 (3o/o)	9 (2o/o)	20 (5o/o)
	No Answer	4	1	3	2	2

<sup>1/</sup> Response to each source as percent of total respondents



Question 5 - What sources have led you to information in previously unfamiliar subject areas ?

		Number of Responses and Percentages by Area & Grade <sup>1/</sup>				
Rank	Sources:	Total	Field	D. C. & Belts.	Junior 7-11	Senior 12 & over
1.	Recent issues of journals or periodicals	493 (63o/o)	379 (63o/o)	114 (64o/o)	229 (64o/o)	264 (63o/o)
2.	Conversations with colleagues	444 (57o/o)	344 (57o/o)	100 (56o/o)	210 (58o/o)	234 (56o/o)
3.	Attendance at scientific and technical meetings	345 (44o/o)	272 (45o/o)	73 (41o/o)	151 (42o/o)	194 (46o/o)
4.	Standard reference books, texts, or handbooks	316 (41o/o)	246 (41o/o)	70 (39o/o)	145 (40o/o)	171 (41o/o)
5.	Abstracting journals or services	305 (39o/o)	254 (42o/o)	51 (29o/o)	145 (40o/o)	160 (38o/o)
6.	Routing and distribution of current literature	270 (35o/o)	212 (35o/o)	58 (33o/o)	141 (39o/o)	129 (31o/o)
7.	Bibliographies and reference lists	264 (34o/o)	200 (33o/o)	64 (36o/o)	123 (34o/o)	141 (34o/o)
8.	Informal personal contact or correspondence (other than with colleagues or at meetings)	246 (32o/o)	193 (32o/o)	53 (30o/o)	104 (29o/o)	142 (34o/o)
9.	Review and historical articles	231 (30o/o)	177 (29o/o)	54 (30o/o)	104 (29o/o)	127 (30o/o)
10.	Browsing in library	210 (27o/o)	160 (27o/o)	50 (28o/o)	97 (27o/o)	113 (27o/o)
11.	Periodic or cumulative indexes to individual journals or periodicals	185 (24o/o)	147 (24o/o)	38 (21o/o)	95 (26o/o)	90 (21o/o)
12.	By chance or accident (as while looking for something else)	184 (24o/o)	144 (24o/o)	40 (22o/o)	90 (25o/o)	94 (22o/o)
13.	Library card catalogs	164 (21o/o)	120 (20o/o)	44 (25o/o)	75 (21o/o)	89 (21o/o)
14.	Published indexes or catalogs	162 (21o/o)	129 (21o/o)	33 (19o/o)	83 (23o/o)	79 (19o/o)
15.	Counsel or advice of superiors	161 (21o/o)	120 (20o/o)	41 (23o/o)	87 (24o/o)	74 (18o/o)
16.	Library reference services	129 (17o/o)	101 (17o/o)	28 (16o/o)	66 (18o/o)	63 (15o/o)
17.	Browsing in old or out-dated literature	123 (16o/o)	100 (17o/o)	23 (13o/o)	57 (16o/o)	66 (16o/o)
18.	Personal or professional activities outside USDA	106 (14o/o)	78 (13o/o)	28 (16o/o)	44 (12o/o)	62 (15o/o)
19.	Office or agency reference files or reference services	100 (13o/o)	67 (11o/o)	33 (19o/o)	44 (12o/o)	56 (13o/o)
20.	Library acquisition list	83 (11o/o)	68 (11o/o)	15 (8o/o)	43 (12o/o)	40 (10o/o)
21.	Periodic progress reports	82 (11o/o)	66 (11o/o)	16 (9o/o)	31 (9o/o)	51 (12o/o)
22.	Your other work or problems	66 (8o/o)	46 (8o/o)	20 (11o/o)	29 (8o/o)	37 (9o/o)
23.	Preparation of invited papers or speeches	50 (6o/o)	38 (6o/o)	12 (7o/o)	19 (5o/o)	31 (7o/o)
24.	Personal files, notes, or reference lists	41 (5o/o)	30 (5o/o)	11 (6o/o)	20 (6o/o)	21 (5o/o)
25.	Memory or previous use	14 (2o/o)	14 (2o/o)	0 (0)	10 (3o/o)	4 (1o/o)
	No answer	10	4	6	4	6

<sup>1/</sup> Response to each source as percent of total respondents

## Question 6 - What sources have helped you to find useful historical material ?

Rank	Sources:	Number of Responses and Percentages by Area & Grade <sup>1/</sup>				
		Total	Field	D. C. & Belts.	Junior 7-11	Senior 12 & over
1.	Review and historical articles	500 (65o/o)	395 (66o/o)	105 (66o/o)	226 (63o/o)	274 (67o/o)
2.	Standard reference books, texts, or handbooks	380 (50o/o)	292 (48o/o)	88 (55o/o)	165 (46o/o)	215 (52o/o)
3.	Bibliographies and reference lists	370 (48o/o)	280 (46o/o)	90 (56o/o)	168 (47o/o)	202 (49o/o)
4.	Browsing in old or out-dated literature	313 (41o/o)	247 (41o/o)	66 (41o/o)	145 (41o/o)	168 (41o/o)
5.	Published indexes or catalogs	256 (33o/o)	191 (32o/o)	65 (41o/o)	123 (34o/o)	133 (32o/o)
6.	Library card catalogs	248 (32o/o)	175 (29o/o)	73 (46o/o)	118 (33o/o)	130 (32o/o)
7.	Conversations with colleagues	237 (31o/o)	184 (31o/o)	53 (33o/o)	102 (29o/o)	135 (33o/o)
8.	Abstracting journals or services	226 (29o/o)	183 (30o/o)	43 (27o/o)	100 (28o/o)	126 (31o/o)
9.	Periodic or cumulative indexes to individual journals or periodicals	214 (28o/o)	164 (27o/o)	50 (31o/o)	99 (28o/o)	115 (28o/o)
10.	Library reference services	179 (23o/o)	132 (22o/o)	47 (29o/o)	92 (26o/o)	87 (21o/o)
11.	Personal files, notes or reference lists	165 (22o/o)	132 (22o/o)	33 (21o/o)	78 (22o/o)	87 (21o/o)
12.	Browsing in library	161 (21o/o)	126 (21o/o)	35 (22o/o)	77 (22o/o)	84 (20o/o)
13.	Office or agency reference files or reference services	142 (19o/o)	93 (15o/o)	49 (31o/o)	69 (19o/o)	73 (18o/o)
14.	Recent issues of journals or periodicals	122 (16o/o)	98 (16o/o)	24 (15o/o)	59 (17o/o)	63 (15o/o)
15.	Memory or previous use	107 (14o/o)	75 (12o/o)	32 (20o/o)	43 (12o/o)	64 (16o/o)
16.	Counsel or advice of superiors	101 (13o/o)	79 (13o/o)	22 (14o/o)	57 (16o/o)	44 (11o/o)
17.	By chance or accident (as while looking for something else)	100 (13o/o)	87 (14o/o)	13 (8o/o)	59 (17o/o)	41 (10o/o)
18.	Informal personal contact or correspondence (other than with colleagues or at meetings)	92 (12o/o)	77 (13o/o)	15 (9o/o)	43 (12o/o)	49 (12o/o)
19.	Attendance at scientific and technical meetings	64 (8o/o)	53 (9o/o)	11 (7o/o)	30 (8o/o)	34 (8o/o)
20.	Preparation of invited papers or speeches	56 (7o/o)	42 (7o/o)	14 (9o/o)	20 (6o/o)	36 (9o/o)
21.	Routing and distribution of current literature	46 (6o/o)	36 (6o/o)	10 (6o/o)	23 (6o/o)	23 (6o/o)
22.	Library acquisition list	36 (5o/o)	28 (5o/o)	8 (5o/o)	20 (6o/o)	16 (4o/o)
23.	Personal or professional activities outside USDA	32 (4o/o)	27 (4o/o)	5 (3o/o)	18 (5o/o)	14 (3o/o)
24.	Your other work or problems	26 (3o/o)	17 (3o/o)	9 (6o/o)	14 (4o/o)	12 (3o/o)
25.	Periodic progress reports	20 (3o/o)	18 (3o/o)	2 (1o/o)	9 (3o/o)	11 (3o/o)
	No Answer	23	20	3	7	16

<sup>1/</sup> Response to each source as percent of total respondents



## SUMMARY OF INQUIRY ON REQUIREMENTS OF USDA RESEARCH WORKERS

TABLE R28

Question 7 - In cases you can recall, through what sources have you found out about work of other scientists pertinent to your own research before their results were published ?

		Number of Responses and Percentages by Area & Grade <sup>1/</sup>				
Rank	Sources:	Total	Field	D. C. & Belts.	Junior 7-11	Senior 12 & over
1.	Conversations with colleagues	649 (85o/o)	510 (86o/o)	139 (82o/o)	286 (84o/o)	363 (86o/o)
2.	Attendance at scientific and technical meetings	554 (73o/o)	452 (76o/o)	102 (60o/o)	229 (67o/o)	325 (77o/o)
3.	Informal personal contact or correspondence (other than with colleagues or at meetings)	520 (68o/o)	398 (67o/o)	122 (72o/o)	211 (62o/o)	309 (74o/o)
4.	Counsel or advice of superiors	226 (30o/o)	185 (31o/o)	41 (24o/o)	120 (35o/o)	106 (25o/o)
5.	Periodic progress reports	219 (29o/o)	182 (31o/o)	37 (22o/o)	98 (29o/o)	121 (29o/o)
6.	Personal or professional activities outside USDA	167 (22o/o)	127 (21o/o)	40 (24o/o)	61 (18o/o)	106 (25o/o)
7.	By chance or accident (as while looking for something else)	60 (8o/o)	38 (6o/o)	22 (13o/o)	20 (6o/o)	40 (10o/o)
8.	Recent issues of journals	53 (7o/o)	35 (6o/o)	18 (11o/o)	23 (7o/o)	30 (7o/o)
9.	Preparation of invited papers or speeches	40 (5o/o)	35 (6o/o)	5 (3o/o)	15 (4o/o)	25 (6o/o)
10.	Routing and distribution of current literature	34 (4o/o)	23 (4o/o)	11 (7o/o)	17 (5o/o)	17 (4o/o)
11.	Your other work or problems	34 (4o/o)	20 (3o/o)	14 (8o/o)	12 (4o/o)	22 (5o/o)
12.	Personal files, notes, or reference lists	24 (3o/o)	21 (4o/o)	3 (2o/o)	14 (4o/o)	10 (2o/o)
13.	Office or agency reference files or reference services	23 (3o/o)	17 (3o/o)	6 (4o/o)	11 (3o/o)	12 (3o/o)
14.	Abstracting journals or services	15 (2o/o)	8 (1o/o)	7 (4o/o)	6 (2o/o)	9 (2o/o)
15.	Memory or previous use	10 (1o/o)	8 (1o/o)	2 (1o/o)	5 (1o/o)	5 (1o/o)
16.	Bibliographies and reference lists	10 (1o/o)	4 (1o/o)	6 (4o/o)	3 (1o/o)	7 (2o/o)
17.	Library reference services	9 (1o/o)	8 (1o/o)	1 (1o/o)	7 (2o/o)	2 (0)
18.	Published indexes or catalogs	7 (1o/o)	5 (1o/o)	2 (1o/o)	3 (1o/o)	4 (1o/o)
19.	Library acquisition list	6 (1o/o)	5 (1o/o)	1 (1o/o)	3 (1o/o)	3 (1o/o)
20.	Library card catalogs	6 (1o/o)	3 (1o/o)	3 (2o/o)	4 (1o/o)	2 (0)
21.	Standard reference books, texts, or handbooks	5 (1o/o)	4 (1o/o)	1 (1o/o)	2 (1o/o)	3 (1o/o)
22.	Review and historical articles	5 (1o/o)	3 (1o/o)	2 (1o/o)	3 (1o/o)	2 (0)
23.	Browsing in old or out-dated literature	4 (1o/o)	3 (1o/o)	1 (1o/o)	2 (1o/o)	2 (0)
24.	Periodic or cumulative indexes to individual journals or periodicals	4 (1o/o)	2 (0)	2 (1o/o)	2 (1o/o)	2 (0)
25.	Browsing in library	4 (1o/o)	2 (0)	2 (1o/o)	1 (0)	3 (1o/o)
	No answer	29	14	15	23	6

<sup>1/</sup> Response to each source as percent of total respondents

## SUMMARY OF INQUIRY ON REQUIREMENTS OF USDA RESEARCH WORKERS

Question 8 - About how much time seems to you to elapse between the time you find out about such work and the time results are published ?

1 - 6 months    7 - 12 months    13 - 18 months     
 19 - 24 months    longer   

	A R E A		G R A D E	
Total	Field	D. C. & Belts.	Junior 7 - 11	Senior 12 & over

Time - MonthsNumber of Responses

1 - 6	92	64	28	47	46
7 - 12	322	250	72	132	190
13 - 18	230	186	44	108	122
19 - 24	98	78	20	48	50
Longer	49	37	12	19	30
Total Responses	791	615	176	353	438
Total Respondents to Question 8 <u>1/</u>	728	566	162	328	400
No Answer	62	40	22	36	26

Percent of Total Respondents

1 - 6	13	11	17	14	12
7 - 12	44	44	44	40	48
13 - 18	32	33	27	33	30
19 - 24	13	14	12	15	12
Longer	7	7	7	6	8
Total Responses	109	109	107	108	110

1/ The total of responses is more than the total of respondents as several time boxes could be marked by one respondents.



Question 9 - Upon which sources do you most rely for keeping currently abreast of scientific publications in your area of interest or research ?

Rank	Sources	Number of Responses and Percentages by Area & Grade <u>1/</u>				
		Total	Field	D. C. & Belts.	Junior 7-11	Senior 12 & over
1.	Recent issues of journals or periodicals	729 (93o/o)	571 (95o/o)	158 (87o/o)	338 (93o/o)	391 (92o/o)
2.	Abstracting journals or services	425 (54o/o)	356 (59o/o)	69 (38o/o)	191 (53o/o)	234 (55o/o)
3.	Routing and distribution of current literature	423 (54o/o)	325 (54o/o)	98 (54o/o)	203 (56o/o)	220 (52o/o)
4.	Attendance at scientific and technical meetings	363 (46o/o)	293 (49o/o)	70 (38o/o)	149 (41o/o)	214 (50o/o)
5.	Conversations with colleagues	289 (37o/o)	228 (38o/o)	61 (34o/o)	134 (37o/o)	155 (37o/o)
6.	Bibliographies and reference lists	228 (29o/o)	171 (28o/o)	57 (31o/o)	110 (30o/o)	118 (28o/o)
7.	Published indexes or catalogs	181 (23o/o)	136 (23o/o)	45 (25o/o)	91 (25o/o)	90 (21o/o)
8.	Library acquisition list	169 (22o/o)	140 (23o/o)	29 (16o/o)	83 (23o/o)	86 (20o/o)
9.	Periodic or cumulative indexes to individual journals or periodicals	167 (21o/o)	126 (21o/o)	41 (23o/o)	89 (25o/o)	78 (18o/o)
10.	Periodic progress reports	138 (18o/o)	115 (19o/o)	23 (13o/o)	67 (19o/o)	71 (17o/o)
11.	Informal personal contact or correspondence (other than with colleagues or at meetings)	132 (17o/o)	104 (17o/o)	28 (15o/o)	57 (16o/o)	75 (18o/o)
12.	Browsing in library	109 (14o/o)	81 (13o/o)	28 (15o/o)	50 (14o/o)	59 (14o/o)
13.	Counsel or advice of superiors	105 (13o/o)	79 (13o/o)	26 (14o/o)	63 (17o/o)	42 (10o/o)
14.	Library reference services	81 (10o/o)	64 (11o/o)	17 (9o/o)	45 (12o/o)	36 (8o/o)
15.	Review and historical articles	79 (10o/o)	55 (9o/o)	24 (13o/o)	35 (10o/o)	44 (10o/o)
16.	Office or agency reference files or reference services	79 (10o/o)	52 (9o/o)	27 (15o/o)	41 (11o/o)	38 (9o/o)
17.	Personal or professional activities outside USDA	66 (8o/o)	51 (8o/o)	15 (8o/o)	26 (7o/o)	40 (9o/o)
18.	Personal files, notes, or reference lists	66 (8o/o)	48 (8o/o)	18 (10o/o)	40 (11o/o)	26 (6o/o)
19.	Standard reference books, texts, or handbooks	44 (6o/o)	28 (5o/o)	16 (9o/o)	22 (6o/o)	22 (5o/o)
20.	Library card catalogs	35 (4o/o)	23 (4o/o)	12 (7o/o)	21 (6o/o)	14 (6o/o)
21.	Preparation of invited papers or speeches	25 (3o/o)	20 (3o/o)	5 (3o/o)	8 (2o/o)	17 (4o/o)
22.	By chance or accident (as while looking for something else)	22 (3o/o)	13 (2o/o)	9 (5o/o)	15 (4o/o)	7 (2o/o)
23.	Your other work or problems	16 (2o/o)	10 (2o/o)	6 (3o/o)	9 (2o/o)	7 (2o/o)
24.	Memory or previous use	13 (2o/o)	7 (1o/o)	6 (3o/o)	7 (2o/o)	6 (1o/o)
25.	Browsing in old or out-dated literature	1 (0)	0 (0)	1 (1o/o)	0 (0)	1 (0)
	No Answer	4	2	2	2	2

1/ Response to each source as percent of total respondents

Question 10 - Which sources (if any) have you tried to use, but found to be of little value for finding information important to your research ?

Rank	Sources	Number of Responses and Percentages by Area & Grade <u>1/</u>				
		Total	Field	D. C. & Belts.	Junior 7-11	Senior 12 & over
1.	Browsing in old or out-dated literature	133 (34o/o)	109 (36o/o)	24 (27o/o)	62 (35o/o)	71 (32o/o)
2.	Library card catalogs	99 (25o/o)	75 (24o/o)	24 (27o/o)	46 (26o/o)	53 (24o/o)
3.	Browsing in library	92 (23o/o)	68 (22o/o)	24 (27o/o)	42 (24o/o)	50 (23o/o)
4.	Library acquisition list	85 (21o/o)	68 (22o/o)	17 (19o/o)	32 (18o/o)	53 (24o/o)
5.	By chance or accident (as while looking for something else)	77 (19o/o)	56 (18o/o)	21 (23o/o)	39 (22o/o)	38 (17o/o)
6.	Office or agency reference files or reference services	65 (16o/o)	56 (18o/o)	9 (10o/o)	27 (15o/o)	38 (17o/o)
7.	Library reference services	54 (14o/o)	44 (14o/o)	10 (11o/o)	24 (14o/o)	30 (14o/o)
8.	Personal or professional activities outside USDA	49 (12o/o)	38 (12o/o)	11 (12o/o)	28 (16o/o)	21 (10o/o)
9.	Published indexes or catalogs	48 (12o/o)	40 (13o/o)	8 (9o/o)	16 (9o/o)	32 (15o/o)
10.	Periodic progress reports	48 (12o/o)	36 (12o/o)	12 (13o/o)	17 (10o/o)	31 (14o/o)
11.	Standard reference books, texts, or handbooks	47 (12o/o)	38 (12o/o)	9 (10o/o)	22 (12o/o)	25 (11o/o)
12.	Counsel or advice of superiors	45 (11o/o)	34 (11o/o)	11 (12o/o)	17 (10o/o)	28 (13o/o)
13.	Preparation of invited papers or speeches	38 (10o/o)	31 (10o/o)	7 (8o/o)	20 (11o/o)	18 (8o/o)
14.	Routing and distribution of current literature	35 (9o/o)	24 (8o/o)	11 (12o/o)	13 (7o/o)	22 (10o/o)
15.	Bibliographies and reference lists	31 (8o/o)	22 (7o/o)	9 (10o/o)	7 (4o/o)	24 (11o/o)
16.	Memory or previous use	27 (7o/o)	22 (7o/o)	5 (6o/o)	15 (8o/o)	12 (5o/o)
17.	Periodic or cumulative indexes to individual journals or periodicals	24 (6o/o)	18 (6o/o)	6 (7o/o)	10 (6o/o)	14 (6o/o)
18.	Abstracting journals or services	22 (6o/o)	13 (4o/o)	9 (10o/o)	8 (5o/o)	14 (6o/o)
19.	Informal personal contact or correspondence (other than with colleagues or at meetings)	21 (5o/o)	19 (6o/o)	2 (2o/o)	13 (7o/o)	8 (4o/o)
20.	Review and historical articles	21 (5o/o)	17 (6o/o)	4 (4o/o)	6 (3o/o)	15 (7o/o)
21.	Your other work or problems	19 (5o/o)	16 (5o/o)	3 (3o/o)	13 (7o/o)	6 (3o/o)
22.	Attendance at scientific and technical meetings	15 (4o/o)	12 (4o/o)	3 (3o/o)	7 (4o/o)	8 (4o/o)
23.	Personal files, notes, or reference lists	14 (4o/o)	14 (5o/o)	0 (0)	3 (2o/o)	11 (5o/o)
24.	Conversations with colleagues	5 (1o/o)	3 (10o/o)	2 (2o/o)	3 (2o/o)	2 (1o/o)
25.	Recent issues of journals or periodicals	3 (1o/o)	1 (0)	2 (2o/o)	0 (0)	3 (1o/o)
	No answer	393	299	94	187	206

1/ Response to each source as percent of total respondents



The purpose of this questionnaire is to measure the professional requirements of the Department of Agriculture research workers for published information and their problems in obtaining it. Correspondents were asked to indicate their fields of interest as well as to identify the sources they used to gain access to information in those fields of interest.

#### Fields of Interest

Information fields of interest were collected through responses on the Specialties List used by the National Science Foundation (NSF) in maintaining the National Register of Scientific and Technical Personnel. The list used by NSF was enclosed with the Requirements questionnaire. The correspondent was instructed to mark as many fields as was important to him in his field of research. The areas with which this part of the survey was concerned were those in which the researcher needed and used published scientific and technical information. This is in contrast to the concern of the National Science Foundation for a register on the basis of professional competence.

A copy of the specialties list is shown in Exhibit R31. Instructions for answering this part of the survey were:

"Enclosed is a copy of the Specialties List used by the National Science Foundation in maintaining the National Register of Scientific and Technical Personnel. You may have used a similar list if you submitted a National Register Questionnaire specifying the areas of your professional competence. The areas with which the present survey is concerned are not necessarily those of your professional competence, but those in which you need and use published scientific and technical information."

"Instructions in this section of the questionnaire refer to the accompanying Specialties List. Read through the following instructions and observe the example before marking the List."

"Instructions: Review the list. Select those specialty titles describing fields in which subject matter, methods, or other information is important to you. For each specialty title selected:

1. Circle the corresponding code number on the List;
2. If your primary interest is for methods, procedures, or techniques, write the letter, "M", before the circled code number;
3. Estimate the time in years when most information important to you is of historical rather than current interest. To the left of the circled code number (and the letter "M" if used) write that time in years from initial publication date."

"Example:

2	M	(7802)	Physiology
			Reproduction
			Zoology
50		(8X06)	Parasitology
			Animal Husbandry
25		(8503)	Small Animal

"Now please mark the Specialties List in accordance with the instructions. Mark as many fields as you think important."

#### Method of analysis:

The specialties list is arranged so that the 902 titles referred to as minor order are grouped under sub-fields which are referred to as intermediate groups. The sub-fields are grouped under 10 fields referred to as major groups. For this analysis we have 11 major groups. To utilize punch cards and EAM equipment for sorting and listing totals the titles were combined based on the 4th digit of the specialty codes, resulting in 11 groups. <sup>1/</sup>

<sup>1/</sup> The titles under the Atmospheric, Lithospheric, and Hydrospheric Specialties group were coded 3000 and 1000; the Biology group contained codes 7000 and 8000; Astronomy, a major group with only 7 responses, was coded 9000, the same as Interdisciplinary Specialties; thus, summarizing on the 4th digit, astronomy became a sub-field. Likewise, items coded 3000 were combined for major Field referred to as "Atmospheric Dynamics through Metrological Instrumentation" and items coded 1000 were combined for another major field referred to as "Geochemistry through Oceanography". The Biology major fields were divided into two parts; Part #1 coded 7000 includes sub-field "Anatomy through Phytopathology"; Part #2 coded 8000 includes sub-fields "Virology through Horticulture".

A tabulation of the number of marks for each specialty title disregarding years may be used as an indication of the relative importance of the fields of interest. Since there were 754 specialties items marked, a combination of items under sub-fields and fields was necessary for a meaningful analysis.

The number of responses for each title (minor) were added to derive a total of responses for each sub-field or intermediate group; likewise, the sub-field totals were added to derive a total of responses for each major field. The summaries included in this study are arranged according to rank determined by number of responses. The rank for the major fields ranges from 1 for Biology part 1 with the greatest number of responses to 11 for Psychology with the smallest number of responses. The rank for the intermediate groups ranged from 1 for Statistics to 52 for Algebra. This excluded all sub-fields with less than 50 responses, and disregarded the order of the major field that the sub-field was associated with. Likewise, the rank for the titles (minor order) ranged from 1 for Design and Analysis of Experiments through 76 for Ground Waters. Likewise, this excluded all titles with less than 50 responses and disregarded the order of the intermediate or major field that the title was associated with.

A list of specialty list titles arranged according to rank as explained above is shown in the tables identified as Specialties List, Field of Interest Rank.

### Statistical Summary

Following the list of titles is a statistical summary of age of material for specialties titles, sub-fields and major fields. In the statistical summary the number in parenthesis beside the name of the field indicates the rank as shown in the list of titles and determined the order listed.

The scientist was asked to estimate the time in years when most information important to him was of historical rather than current interest. Responses to this have been expressed in this report as measuring the age of the material to which he may refer to information published within the period marked. 1/

Instructions for marking the specialties list directed the respondent to select the titles describing fields important to him, circle the corresponding code for each title selected and to write in the time in years from initial publication date when most information in the field is of historical rather than current interest. About 1/4 of the number circled did not report years. The rank was determined by the total number circled rather than the number reporting years.

#### Method of summarizing:

A card was punched for each specialty title marked. About 10,000 cards were produced. Each punch card showed the respondent identification number, the specialty code number, the years reported and showed if "M" for interest in method was recorded.

##### 1. Summaries for each specialty title (minor order)

Cards were sorted by years (age of material) reported for each specialty code. The first Tab summary showed for each title (Minor group) a frequency distribution by years for reports showing methods, for reports not showing methods, and for all reports.

The tally for "0" years represents count of respondents not reporting years. The sums of number of reports and sums of years were shown for each of the 754 titles and the average number of years computed for each title. The mode which was the year with the largest number of reports was identified. Cards were then punched for each of the 754 titles showing the summary information which included number of reports, Mean, Mode, range of years (the low and the high years). The following sorts and listings were made with summary cards arranged as follows:

- (1) by specialty codes in the order printed on Specialties List
- (2) according to rank of number of reports
- (3) according to average age of material

The print out of the above is available, but not included in this report.

##### 2. Summaries for each sub-field or intermediate group

The original punched cards for each specialty title were sorted by the 3rd digit of the specialty code, thus, combining titles into sub-fields or intermediate groups. The cards for each intermediate group were sorted by years and a tab summary showing frequency distribution by years similar to 1 was produced. Again summary cards for the intermediate group were punched and listed according to the 3 arrangements by sub-field, by rank of number of reports, and by average age of material.

##### 3. Summaries for major fields

In the same manner the original punched cards for each specialty title were sorted by the 4th digit of each specialty code combining titles into the 11 major fields. The cards for each major field were sorted by years and a tab summary showing frequency distribution by years was produced. Summary cards were punched and listed as above. The arrangement according to rank of cumulated number of responses was used to determine the arrangement by rank as presented in the Statistical Summaries.

1/ A tabulation which was made of the library request slips by classification number for 3 months will give some information as to the frequency of use by age of material.



It should be pointed out that by accumulating the number of responses for each title to get sub-field total responses and again accumulating sub-field total responses to get major field total responses may misrepresent the importance of any sub-field or major field. The data were treated in this way because there was no other practical way to treat it for analysis. However, the total for any one sub-field would be influenced by the number of titles listed for each sub-field. This ranged from a low of 3 titles to a high of 35.

The following table shows Rank for major groups based on number of items on the list compared with Rank determined by the summation of responses to each title.

<u>Specialties List</u>			
<u>Major Groups</u>	<u>Number of items</u>	<u>Rank based on number of items</u>	<u>Rank based on Summation of responses</u>
Interdisciplinary	139	1	2
Engineering	128	2	7
Mathematical & Statistical	122	3	3
Physics	101	4	8
Geochemistry - Oceanography	79	5	6
Chemistry	76	6	4
Biology #1	71	7	1
Psychology	61	8	11
Atmospheric Dynamics - Meterological Instrumentation	43	9	9
Biology #2	39	10	5
Social Science	27	11	10

The Biology (Part #1) group which ranked first in number of responses only ranked 7th in number of items on the list. This emphasizes its importance as it ranked first in spite of there being fewer opportunities to mark items. Interdisciplinary rated 2nd in actual responses, but first according to items available to mark. Math and Statistics ranked 3rd in both instances.

Using the method explained above for accumulating responses for sub-fields and major fields, tally of number of responses by years was used to combine responses into 5 year periods up to 50 years, with one total for more than 50. Generally, the years reported were in 5 year intervals except under 5 years reports of 1, 2, 3, or 4 years were common. The years reported have been presented in the statistical summary and in the charts as measured from the survey date of 1962.

Considering the years reported as age of material published the number of responses for each age reported was accumulated starting with number reporting the oldest material down through the number reporting 1 year old material. The total reported is shown as 1962 and "0" age or 100.0 percent in the table of respondents wanting access to material published within dates as percent of total respondents. This table expressed in percentages permits a comparison between sub-fields and fields without regard to the number of responses. These percentages are also presented in graphic form for important groups.

NATIONAL REGISTER OF SCIENTIFIC AND TECHNICAL PERSONNEL

This list includes a number of subfields and appropriate specialties within these subfields. The Engineering, Social Sciences, Humanities, and other professional areas presented are not designed to give detailed specialty coverage. This "universal" list is presented in order that you may identify specialties in which you may be competent in related fields.

The section PROFESSIONAL EMPLOYMENT on the 1962 National Register Questionnaire requests that you indicate from this list the specialties in which you consider you have your greatest professional competence (item 12).

Please use the specific specialties and their numbers as indicated; if you find it necessary to select the "Other (specify)" category, write in the code number and give your own brief specialty title in item 12 of the Questionnaire.

**Atmospheric,  
Lithospheric, and  
Hydrospheric  
Specialties**

Sub-field total

**99 Atmospheric Dynamics,  
Chemistry and Physics**

- 1-3001-Aeronomy
- 1-3002-Airglow
- 7-3003-Atmospheric chemistry
- 6-3004-Atmospheric electricity
- 3005-Atmospheric optics and acoustics
- 7-3006-Atmospheric thermodynamics
- 3007-Aurora
- 12-3008-Cloud and precipitation physics
- 1-3010-Composition
- 9-3011-Dynamics of atmospheric motion
- 3012-Magneto hydrodynamics
- 1-3013-Planetary atmospheres
- 31-3014-Radiation
- 8-3015-Solar-terrestrial relationships
- 14-3016-Turbulence and diffusion
- 1-3009-Other (specify)

**207 Climatology**

- 67-3101-Bioclimatology
- 100-3102-Microclimatology
- 5-3103-Paleoclimatology
- 26-3104-Physical climatology
- 9-3105-Synoptic climatology
- 3109-Other (specify)

**92 Synoptic Meteorology**

- 14-3201-Hydrometeorology
- 3-3202-Mesometeorology
- 22-3203-Micrometeorology
- 9-3204-Numerical analysis and prediction
- 19-3205-Observations
- 5-3206-Radar meteorology
- 19-3207-Weather analysis and forecasting
- 1-3209-Other (specify)

**105 Area Specializations**

- 69-3301-Agricultural meteorology
- 19-3345-Air pollution
- 4-3302-Aviation meteorology
- 1-3303-Marine meteorology
- 5-3304-Polar meteorology
- 4-3305-Tropical meteorology
- 3-3309-Other (specify)

**Meteorological**

**37 Instrumentation**

- 30-3401-Automatic data sensing systems
- 1-3402-Balloon sounding systems
- 4-3403-Radar and radio instrumentation
- 3404-Rocket sounding systems
- 3405-Satellite instrumentation
- 2-3409-Other (specify)

**28 Geochemistry**

- 1001-Cosmochemistry

- 8-1002-General inorganic geochemistry
- 8-1003-Isotopes and geochronology
- 6-1004-Mineral synthesis and stability relations of minerals
- 6-1005-Organic geochemistry
- 1009-Other (specify)

**4 Geodesy**

- 1-1101-Earth motions
- 1-1102-Geodetic instrumentation
- 1-1103-Geodetic surveying
- 1403-Gravity
- 1104-Navigation, geodetic astronomy
- 1-1109-Other (specify)

**199 Geology**

- 14-1201-Areal geology
- 12-1202-Engineering geology
- 31-1203-General field geology
- 40-1204-Geology of ground water
- 5-1205-Geology of mineral deposits
- 1206-Geology of petroleum deposits
- 1-1207-Geology of solid fuels
- 9-1208-Glacial geology
- 27-1210-Geomorphology
- 10-1211-Mineralogy and crystallography
- 7-1212-Petrography and petrology, igneous and metamorphic
- 10-1213-Petrography and petrology, sedimentary
- 6-1214-Photogeology
- 8-1215-Stratigraphy
- 6-1216-Structural geology, igneous and metamorphic
- 10-1217-Structural geology, sedimentary
- 3-1209-Other (specify)

**Paleontology and**

**15 Paleobotany**

- 4-1301-Micropaleontology
- 5-1302-Paleobotany
- 5-1303-Paleontology, invertebrate
- 1304-Paleontology, vertebrate
- 1-1305-Palynology
- 1309-Other (specify)

**26 Solid-earth Geophysics**

- 3-1401-Geomagnetism and electricity
- 1402-Geophysical surveying
- 1403-Gravity
- 16-1404-Heat flow
- 7-1405-Physical properties of materials
- 1406-Physics of volcanoes
- 1407-Seismology, induced vibrations
- 1408-Seismology, natural vibrations
- 1410-Tectonophysics
- 1409-Other (specify)

**124 Geography**

- 20-1501-Biogeography
- 7-1502-Cultural geography
- 40-1503-Economic geography
- 6-1504-Historical geography
- 3-1505-Military geography
- 1506-Philosophy of geography
- 20-1507-Physical geography
- 9-1508-Political geography

- 16-1510-Regional geography (specify region)

- 1-1511-Theoretical geography

- 1-1512-Toponymy

- 1-1509-Other (specify)

**506 Hydrology**

- 31-1601-Chemistry of water
- 62-1602-Erosion and sedimentation
- 92-1603-Evaporation and transpiration
- 5-1604-Glaciology
- 50-1605-Ground waters
- 77-1606-Precipitation
- 26-1607-Snow, ice and permafrost
- 109-1608-Soil moisture
- 51-1610-Surface waters
- 3-1609-Other (specify)

**18 Oceanography**

- 4-1701-Biological oceanography
- 1-1702-Chemical oceanography
- 1-1703-Descriptive oceanography
- 1-1704-Hydrography
- 1705-Ocean-bottom processes
- 1-1706-Physical oceanography
- 3-1707-Sea-air interactions
- 7-1708-Shore and near shore processes
- 1710-Underwater sound
- 1709-Other (specify)
- 1909-Atmospheric, lithospheric, and hydrospheric specialties, other (specify)

**Biology**

Please use the specific specialties and the four-digit codes. A number of biological specialties, at the end of this biology section, appropriate to more than one subfield, have only two digits. Please indicate your appropriate subfield and specialties as follows: If your biological subfield is bacteriology (7X) and your specialization is metabolism (...80), code as 7X80; however, if your biological subfield is physiology (78) and your specialization is metabolism (...80), code as 7880.

**43 Anatomy**

- 9-7Y01-Comparative
- 9-7Y02-Gross
- 16-7Y03-Microscopic
- 3-7Y04-Neuroanatomy
- 4-7Y05-Systemic
- 2-7Y06-Topographic

**127 Bacteriology**

- 41-7X01-Bacterial metabolism
- 33-7X02-Bacterial physiology
- 53-7X03-Microbial processes

**505 Botany**

- 3-7001-Bryology
- 50-7002-Dendrology
- 37-7003-Mycology
- 97-7004-Nutrition and growth
- 15-7005-Parasitology



- 3-7006—Phycology
- 69-7007—Plant anatomy
- 196-7008—Plant physiology
- 1-7010—Pteridology
- 33-7011—Systematics of higher plants
- 1-CODE IN ERROR

## 204 Ecology

- 58-7101—Animal ecology
- 129-7102—Plant ecology
- 17-7103—Zoogeography

## 474 Entomology

- 85-7201—Agricultural
- 10-7202—Apiculture
- 89-7203—Control, chemical
- 76-7204—Control, other
- 65-7205—Forest
- 69-7206—Insect pests
- 55-7207—Insect physiology, morphology
- 25-7208—Medical

## 277 Genetics

- 43-7301—Animal
- 12-7302—Human
- 44-7303—Microorganisms
- 115-7304—Plant
- 63-7305—Population studies

## 194 Immunology

- 29-7401—Antibody formation
- 41-7402—Antigens and antibodies
- 33-7403—Antigens—antibody reaction
- 16-7404—Complement
- 18-7405—Hypersensitivity
- 27-7406—Infection and resistance
- 13-7407—Interference; latency
- 17-7408—Tissue antibodies; autoantibodies

## 192 Nutrition

- 70-7501—Animal nutrition
- 15-7502—Clinical nutrition
- 65-7504—Nutrient value of foods
- 42-7505—Requirements and deficiencies

## 40 Pathology

- 9-7601—Clinical
- 4-7602—Comparative
- 12-7603—Cytopathology, histopathology
- 15-7604—Experimental

## 82 Pharmacology

- 6-7701—Chemical pharmacology
- 16-7702—Chemotherapy
- 6-7703—Drug enzymology
- 6-7704—Experimental therapeutics, clinical
- 13-7705—Industrial chemicals
- 3-7706—Neuropharmacology
- 3-7707—Pharmacodynamics
- 1-7708—Psychopharmacology
- 28-7710—Toxicology

## 32 Physiology

- 3-7801—Neurophysiology
- 23-7802—Reproduction
- 6-7803—Respiratory

## 372 Phytopathology

- 41-7901—Bacterial
- 59-7902—Disease control, chemical
- 63-7903—Disease control, other
- 69-7904—Fungal
- 53-7905—Host resistance
- 30-7906—Nematodal
- 12-7907—Physiogenic
- 35-7908—Viral

## 26 Virology

- 8-8Y01—Arbor viruses
- 4-8Y02—Enteric viruses
- 2-8Y03—Pox viruses
- 5-8Y04—Respiratory viruses
- 7-8Y05—Tumor viruses

## 85 Zoology

- 2-8X01—Herpetology
- 2-8X02—Ichthyology
- 14-8X03—Invertebrate
- 12-8X04—Mammalogy
- 9-8X05—Ornithology
- 25-8X06—Parasitology
- 15-8X07—Protozoology
- 6-8X08—Vertebrate

## 527 Agronomy

- 91-8401—Crop breeding, hybridization
- 90-8402—Crop management
- 104-8403—Field crops
- 85-8404—Pasture and forage crops
- 54-8405—Seeds
- 14-8406—Turf and ornamental crops
- 84-8407—Weed control

## 89 Animal Husbandry

- 44-8501—Large animal
- 31-8502—Poultry
- 14-8503—Small animal

## 92 Fish and Wildlife

- 12-8601—Controls
- 22-8602—Food habits
- 30-8603—Habitat influences
- 14-8604—Population dynamics
- 14-8605—Propagation and management

## 537 Forestry and Range

- 64-8701—Erosion control
- 104-8702—Forestry management
- 55-8703—Forest products
- 52-8704—Forest protection
- 31-8705—Irrigation
- 64-8706—Range management
- 89-8707—Silviculture
- 78-8708—Watershed management

## 119 Horticulture

- 24-8801—Floriculture and ornamentals
- 48-8802—Fruits
- 47-8803—Vegetables

# Chemistry

## 637 Analytical Chemistry

- 74-0001—Absorption spectroscopy
- 20-0002—Chemical microscopy
- 158-0003—Chromatographic analysis
- 13-0004—Electrometric analysis
- 11-0005—Emission spectroscopy
- 29-0006—Gas analysis
- 50-0007—Gravimetric analysis
- 18-0008—Mass spectroscopy
- 44-0010—Microchemistry
- 13-0011—Nucleonics
- 56-0012—Qualitative analysis
- 56-0013—Solvent extraction
- 67-0014—Volumetric analysis
- 23-0015—X-ray analysis
- 5-0009—Other (specify)

## 161 Inorganic Chemistry

- 8-0101—Alkalies and compounds
- 9-0102—Alkaline earths and compounds
- 2-0103—Atomic nuclei
- 7-0104—Boron family
- 3-0105—Building products; cement, lime etc.
- 7-0106—Carbon family
- 18-0107—Clay and clay products
- 13-0108—Coordination compounds
- 3-0110—Electronic materials; semiconductors, ferroelectrics, ferromagnetics
- 1-0111—Explosives, rocket fuels
- 2-0112—Extranuclear structure
- 1-0113—Glass, fused silica
- 5-0114—Halogen family
- 4-0115—Hydrogen
- 0116—Industrial carbon, graphite, carbon black

- 1-0117—Inner-transition elements, lanthanide series and actinide series
- 25-0118—Nitrogen family
- 2-0019—Nonmineral products; asbestos, vermiculite, etc.
- 4-0120—Oxygen family
- 6-0121—Pigments and industrial minerals
- 8-0122—Radioactive minerals and products
- 16-0123—Solutions and solvent theory
- 10-0124—Theoretical inorganic chemistry
- 3-0125—Transition elements
- 3-0109—Other (specify)

## 972 Organic Chemistry

- 25-0201—Adhesives
- 105-0202—Agricultural chemicals
- 28-0203—Aliphatic chemistry
- 17-0204—Alkaloids
- 93-0205—Amino acids and proteins
- 24-0206—Antibiotics
- 25-0207—Aromatic hydrocarbons, derivatives
- 89-0208—Carbohydrates
- 1-0210—Coal
- 9-0211—Dyestuffs
- 15-0212—Elastomers and related products
- 1-0213—Explosives and rocket fuels
- 4-0214—Fluorine compounds
- 14-0215—Free radical
- 20-0216—Heterocycles
- 49-0217—Ion exchange resins
- 64-0218—Oils, fats, waxes
- 10-0219—Organometallics
- 4-0220—Petroleum
- 13-0221—Pharmaceuticals
- 31-0222—Phosphorus compounds
- 7-0223—Photo products
- 36-0224—Plastics and synthetic resins
- 28-0225—Protective coatings
- 28-0226—Reaction mechanisms
- 3-0227—Silicon compounds
- 13-0228—Small ring compounds
- 36-0229—Soaps, detergents, surfactants
- 20-0230—Stereochemistry
- 19-0231—Steroids
- 19-0232—Terpenes and other alicyclics
- 25-0233—Textiles and related products
- 36-0234—Use of isotopes
- 53-0235—Wood, paper and cellulose
- 8-0209—Other (specify)

- 8-0909—Chemistry, other (specify)

# Mathematics and Statistics

## 69 Algebra

- 4-2X01—Boolean algebra
- 3-2X02—Combinatorial analysis
- 8-2X03—Differential algebra
- 1-2X04—Fields, rings, algebras
- 4-2X05—Groups, generalizations
- 2X06—Homological algebra
- 3-2X07—Lattices
- 31-2X08—Linear algebra and matrix theory
- 2-2X10—Order, total and partial
- 11-2X11—Polynomials
- 1-2X12—Representaton theory
- 1-2X09—Other (specify)

## Analysis and Functional Analysis

- 2001—Banach spaces and algebras
- 10-2002—Calculus of variations
- 1-2003—Convexity, inequalities
- 15-2004—Difference equations, functional equations
- 18-2005—Functions of real variables
- 16-2006—Functions of a complex variable
- 13-2007—Functions of several complex variables
- 2008—Hilbert spaces
- 8-2010—Integral equations
- 5-2011—Integral transforms
- 12-2012—Interpolation, approximation



- 2013—Lie groups and algebras
- 12-2014—Measure, integration, area
- 17-2015—Operational calculus
- 30-2016—Ordinary differential equations
- 30-2017—Partial differential equations
- 2-2018—Potential theory, subharmonic functions
- 6-2019—Series, summability
- 3-2020—Set theory
- 1-2021—Special functions
- 11-2022—Trigonometric series and integrals
- 1-2009—Other (specify)

## 16 Geometry

- 2101—Affine geometry
- 6-2102—Algebraic geometry
- 2103—Complex manifolds
- 2104—Convex domains, extremum problems
- 4-2105—Differential geometry, tensor analysis
- 5-2106—Euclidean geometry
- 2107—Finite geometries
- 2108—Foundations
- 2110—Integral geometry
- 1-2111—Projective, non-Euclidean geometries
- 2112—Riemannian geometry
- 2109—Other (specify)

## 29 Logic

- 16-2201—Applications of logic
- 5-2202—Formal and symbolic logic
- 6-2203—Foundations of mathematics
- 1-2204—Intuitionism
- 1-2205—Recursive functions
- 2209—Other (specify)

## Mathematics of Resource

### 237 Use

- 25-2301—Activity analysis
- 1-2302—Actuarial mathematics
- 90-2303—Biometrics, biostatistics
- 7-2304—Control systems
- 2-2305—Cryptography
- 23-2306—Dynamic programming
- 37-2307—Econometrics
- 20-2308—Game theory
- 4-2310—Information and communication theory
- 8-2311—Logistics, inventory
- 18-2312—Operations research
- 2-2313—Weapons systems evaluation
- 2309—Other (specify)

## 5 Number Theory

- 5-2401—Algebraic number theory
- 2402—Analytic number theory
- 2403—Diophantine approximation
- 2404—Elementary number theory
- 2405—Geometry of numbers
- 2409—Other (specify)

## Numerical Methods and

### 290 Computation

- 2-2501—Algorithm construction
- 29-2502—Analogue systems, coding and programming
- 7-2503—Difference and functional equations
- 67-2504—Digital computers, coding and programming
- 19-2505—Digital computers, logic and design
- 2-2506—Eigenvalues, Raleigh-Ritz method
- 20-2507—Error analysis
- 7-2508—General methods, iteration
- 41-2510—Interpolation, approximation, curve-fitting
- 5-2511—Integral and integro-differential equations
- 33-2512—Linear equations, matrices
- 7-2513—Nomography, tables
- 4-2514—Numerical differentiation, quadrature
- 23-2515—Ordinary differential equations

- 23-2516—Partial differential equations
- 1-2517—Special functions
- 2509—Other (specify)

## 14 Topology

- 2601—Abstract spaces
- 2602—Applications to analysis
- 2-2603—Fibre bundles and spaces
- 11-2604—Graphs
- 2605—Homology, cohomology
- 2606—Homotopy
- 2607—Manifolds, Kaehler spaces
- 1-2608—Mappings
- 2610—Point-set topology
- 2611—Topological dynamics
- 2612—Topological groups
- 2609—Other (specify)

## 123 Probability

- 19-2701—Analytic probability theory
- 53-2702—Applications of probability
- 11-2703—Foundations of probability
- 5-2704—Limit theorems
- 5-2705—Stochastic processes, general
- 6-2706—Markov processes
- 1-2707—Theory of generating functions
- 23-2708—Time series
- 2709—Other (specify)

## 1059 Statistics

- 128-2801—Analytical statistics
- 21-2802—Decision theory, sequential analysis
- 256-2803—Design and analysis of experiments
- 65-2804—Estimation and testing, parametric
- 71-2805—Multivariate analysis
- 25-2806—Non-parametric methods
- 25-2807—Quality control
- 218-2808—Sampling techniques
- 153-2810—Survey methods: including forms design, data collection and data processing
- 49-2811—Theory of statistical inference
- 46-2812—Time series analysis
- 2-2809—Other (specify)
- 2909—Mathematics, other (specify)

# Physics

## 51 Acoustics

- 5-4Y01—Applied acoustics, instruments and apparatus
- 4Y02—Architectural acoustics
- 2-4Y03—Bioacoustics
- 1-4Y04—Ear and hearing
- 2-4Y05—Electroacoustics
- 8-4Y06—Mechanical vibrations & shock
- 4Y07—Musical instruments & music
- 3-4Y08—Noise
- 5-4Y10—Sound transmission
- 4Y11—Speech and singing
- 21-4Y12—Ultrasonics
- 4-4Y13—Underwater sound
- 4Y09—Other (specify)

## Atomic and Molecular Physics

- 4X01—Atomic mass and abundance
- 4X02—Atomic and molecular beams
- 5-4X03—Structure and spectra
- 2-4X04—X-ray phenomena
- 8-4X05—X-ray technology
- 4X09—Other (specify)

## Electromagnetic Waves and Electron Physics

- 1-4001—Antenna theory
- 28-4002—Electrical measurements and instruments
- 3-4003—Electron dynamics
- 3-4004—Gas discharge
- 3-4005—Masers and similar devices

- 2-4006—Microwaves
- 5-4007—Physical electronics
- 5-4008—Radio waves
- 4009—Other (specify)

## Elementary Particle Physics

- 1-4101—Cosmic rays
- 4102—High energy accelerators
- 3-4103—High energy particles
- 4109—Other (specify)

## 69 Mechanics

- 14-4201—Analytical mechanics
- 4202—Ballistics
- 1-4203—Continuum mechanics
- 4204—Flight dynamics
- 2-4205—Gravity and gravitation
- 2-4206—High pressure phenomena
- 9-4207—High vacuum techniques
- 23-4208—Instrumental measurement (principally mechanical)

- 16-4210—Rheology
- 2-4209—Other (specify)

## 34 Nuclear Structure Physics

- 2-4301—Accelerators
- 5-4302—Detectors
- 4-4303—Nuclear reactions and scattering
- 2-4304—Nuclear spectroscopy
- 18-4305—Radiation and isotope use
- 3-4306—Reactors
- 4309—Other (specify)

## 143 Optics

- 3-4401—Atmospheric optics
- 27-4402—Color, colorimetry & photometry
- 7-4403—Films and coatings
- 4404—Geometrical optics
- 11-4405—Illumination
- 6-4406—Lenses
- 2-4407—Optical instruments
- 37-4408—Photography
- 3-4410—Physical optics
- 23-4411—Spectroscopy
- 4-4412—Vision
- 4409—Other (specify)

## 72 Physics of Fluids

- 17-4501—Boundary layer effects
- 7-4502—Compressible fluid dynamics
- 14-4503—Incompressible fluid dynamics
- 4504—High-temperature flow
- 4505—Magneto fluid dynamics
- 3-4506—Plasma physics
- 4-4507—Plastic flow
- 4508—Rarefied gas flow
- 3-4510—Shock wave phenomena
- 4-4511—Structure and properties of gases
- 7-4512—Structure and properties of liquids
- 4513—Superfluidity
- 13-4514—Turbulence
- 4509—Other (specify)

## 74 Solid State

- 2-4601—Crystallography
- 7-4602—Dielectrics (including fluids)
- 9-4603—High polymers and glasses
- 4-4604—Luminescence
- 7-4605—Magnetic resonance
- 3-4606—Magnetism in solids
- 6-4607—Photoelectric phenomena
- 1-4608—Physics of metals
- 6-4610—Piezo and ferro-electricity
- 4-4611—Radiation damage
- 6-4612—Semiconductors
- 1-4613—Superconductivity
- 9-4614—Surface physics
- 9-4615—Thin films
- 4609—Other (specify)

## 3 Theoretical Physics

- 1-4701—Field theory
- 1-4702—Quantum mechanics



- 4703—Relativity and gravitation
- 1 -4704—Statistical mechanics and kinetic theory
- 4709—Other (specify)

## 89 Thermal Phenomena

- 5 -4801—Cryogenics
- 2 7 -4802—Heat radiation and transmission
- 4 0 -4803—Temperature & its measurements
- 1 7 -4804—Thermodynamics
- 4809—Other (specify)
- 1 -4909—Physics, other (specify)

## 7 Astronomy

- 9001—Astrometry
- 9002—Astrophysics
- 1 -9003—Celestial mechanics
- 9004—Cosmogony
- 9005—Cosmology
- 1 -9006—Design of astronomical instruments
- 1 -9007—Navigation, geodetic astronomy
- 1 -9008—Photoelectric photometry
- 9010—Physics of planets, satellites
- 1 -9011—Physics of the interstellar medium
- 1 -9012—Physics of the sun
- 1 -9013—Radio astronomy
- 9014—Spectroscopy of astronomical sources
- 9015—Star systems and statistical astronomy
- 9016—Stellar energy sources and nucleogenesis
- 9009—Astronomy, other (specify)

## Psychology

### 15 Clinical Psychology

- 9 -5001—Behavior problems
- 1 -5002—Crime and delinquency
- 1 -5003—Experimental psychopathology
- 2 -5004—Group therapy
- 5005—Individual diagnosis & therapy
- 5006—Mental deficiency
- 1 -5007—Objective tests
- 5008—Projective techniques
- 5010—Speech pathology
- 1 -5009—Other (specify)

### 5 Counseling and Guidance

- 1 -5101—Educational counseling
- 5102—Nondirective therapy
- 2 -5103—Personal adjustment
- 1 -5104—Rehabilitation
- 1 -5105—Vocational counseling
- 5109—Other (specify)

### Developmental Psychology

- 5201—Nursery and pre-school
- 5202—Childhood and adolescence
- 5203—Maturity and old age
- 5209—Other (specify)

### 6 Educational Psychology

- 2 -5301—Educational measurement
- 5302—School adjustment
- 1 -5303—School learning
- 1 -5304—Special education
- 1 -5305—Student personnel
- 1 -5306—Teacher personnel
- 5309—Other (specify)

### 4 General Psychology

- 2 -5401—History and biography
- 1 -5402—Theory and systems
- 1 -5409—Other (specify)

## Industrial and Personnel Psychology

- 115
- 23 -5501—Employee and executive training and development
- 17 -5502—Employee morale and attitudes
- 14 -5503—Job analysis and position classification
- 6 -5504—Labor-management relations
- 15 -5505—Market research, advertising
- 13 -5506—Performance evaluation, criterion development
- 14 -5507—Recruiting, selection, placement
- 7 -5508—Safety research and training
- 5 -5510—Salary and pay plans
- 1 -5509—Other (specify)

### 18 Personality

- 6 -5601—Development
- 3 -5602—Measurement
- 1 -5603—Personality and body
- 5 -5604—Personality and learning
- 2 -5605—Personality and perception
- 1 -5606—Personality theory
- 5607—Structure and dynamics
- 5609—Other (specify)

### -5Y01—Programmed Learning

### -5X01—School Psychology

### 51 Social Psychology

- 3 -5701—Culture and personality
- 5 -5702—Group interaction
- 9 -5703—Language and communication
- 9 -5704—Leadership
- 5 -5705—Mass media communication
- 2 -5706—Role differentiation
- 5 -5707—Social attitudes
- 1 -5708—Social perception and cognition
- 12 -5710—Surveys and polls
- 5709—Other (specify)

### 1 -5909—Psychology, other (specify)

## Interdisciplinary Specialties

### Agriculture and Food Chemistry

- 458
- 7 -9101—Alcoholic beverages
- 42 -9102—Animal and vegetable fats, oils
- 31 -9103—Animal feeds
- 1 9 -9104—Bakery and confectionery products
- 36 -9105—Cereals, carbohydrates
- 81 -9106—Fertilizers, plant growth regulators
- 45 -9107—Food and feed additives
- 36 -9108—Fruits, vegetables, juices
- 43 -9110—Meat, fish, dairy and poultry products
- 7 -9111—Nonalcoholic beverages
- 15 -9112—Nonfood crop products
- 82 -9113—Pesticides (insect, herbicide, fungicides, etc.)
- 8 -9109—Other (specify)

### 598 Biochemistry

- 26 -9201—Antimetabolites
- 55 -9202—Biochemical mechanisms
- 8 -9203—Biochemorphy
- 8 -9204—Clinical
- 16 -9205—Cyto-histo-chemistry
- 4 -9206—Endocrine
- 59 -9207—Enzyme, co-enzyme
- 43 -9208—Intermediate metabolism, biosynthesis
- 45 -9210—Microbiological
- 23 -9211—Natural pigments (carotenoids)
- 3 -9212—Neurochemistry
- 30 -9213—Nucleic acids (purines, pyrimidines)
- 15 -9214—Physical

- 15 -9215—Radiation biochemistry
- 74 -9246—Amino acids, peptides, proteins
- 55 -9256—Carbohydrates
- 21 -9273—Immunochemistry
- 37 -9278—Lipids, (phospho-, glyco-, fats, oils)
- 42 -9281—Technology, methodology
- 7 -9285—Oncology, carcinogenesis
- 11 -9293—Steroids
- 1 -9209—Other (specify)

### 105 Biophysics

- 2 -9301—Bioacoustics and transmission
- 9 -9302—Biochemical physics
- 6 -9303—Bioelectricity and transmission
- 4 -9304—Bio-systems, control, communications
- 2 -9305—Biothermics and bioenergetics
- 7 -9306—Biotransport and membrane physics
- 9 -9307—Cellular biophysics
- 1 -9308—Fluid biomechanics
- 1 -9310—Health physics
- 9311—Mathematical biophysics
- 18 -9312—Methodology, instrumentation, and measurement
- 10 -9313—Molecular biophysics
- 20 -9389—Radiation biology
- 9315—Solid biomechanics
- 2 -9316—Theoretical physical biology
- 2 -9353—Biooptics (physical and geometric)
- 12 -9365—Electron microscopy
- 9309—Other (specify)

### 132 Electronics

- 14 -9401—Circuit theory
- 9 -9402—Computer design & development
- 10 -9403—Electron tubes
- 25 -9404—Electronic circuitry
- 3 -9405—Guidance and control
- 52 -9406—Instrumental measurement (principally electronic)
- 2 -9407—Radio communication
- 10 -9408—Semiconductors
- 5 -9410—Solid state devices, other
- 1 -9411—Television systems
- 1 -9409—Other (specify)

### Experimental, Comparative, and Physiological Psychology

- 18
- 1 -9501—Aesthetics
- 4 -9502—Animal learning
- 1 -9503—Apparatus design & evaluation
- 9504—Audition
- 9505—Autonomic functions
- 9506—CNS functions
- 3 -9507—Communications research, information theory
- 1 -9508—Electroencephalography
- 2 -9510—Engineering psychology
- 1 -9511—Fatigue
- 9512—Feeling and emotion
- 3 -9513—Motivation
- 1 -9514—Motor skills
- 9515—Perception
- 9516—Psychophysics
- 9517—Sensory processes
- 1 -9518—Symbolic processes, problem solving
- 9519—Vision
- 9509—Other (specify)

### Photogrammetry, Photo-interpretation, Cartography

- 99
- 38 -9601—Aerial photography
- 5 -9602—Analytical photogrammetry
- 1 -9603—Ballistic and satellite photogrammetry
- 2 -9604—Compilation cartography
- 9605—Design cartography
- 10 -9606—Interpretation: cultural features
- 9607—Interpretation: military features



- 27-9608—Interpretation: natural features and resources
- 1-9610—Interpretation: space features
- 9611—Reproduction cartography
- 2-9612—Sensor imagery
- 9-9613—Stereo plotting
- 4-9614—Terrestrial photogrammetry
- 9609—Other (specify)

### 287 Physical Chemistry

- 19-9701—Catalysis
- 18-9702—Chemical kinetics
- 33-9703—Colloid chemistry
- 24-9704—Determination of physical constants
- 8-9705—Electrochemistry
- 9706—Electrodeposition
- 3-9707—Flames and explosives
- 1-9708—Fused salts
- 1-9710—Gaseous state
- 9711—High temperature chemistry
- 3-9712—Homogeneous chemical equilibrium
- 39-9713—Ion exchange and applications
- 4-9714—Liquid state
- 20-9715—Molecular structure
- 6-9716—Phase equilibria
- 8-9717—Photochemistry
- 21-9718—Polymer chemistry
- 3-9719—Quantum theory
- 10-9720—Radiation chemistry
- 11-9721—Solid, including X-ray methods
- 11-9722—Solutions of electrolytes
- 5-9723—Solutions of nonelectrolytes
- 27-9724—Surface chemistry
- 3-9725—Thermochemistry
- 8-9726—Thermodynamics
- 1-9709—Other (specify)

### 30 Psychometrics

- 9-9801—Experimental design
- 3-9802—Factor analysis
- 5-9803—High-speed computers
- 5-9804—Mathematical models
- 7-9805—Statistical development
- 1-9806—Test construction, validation
- 9807—Test theory, scale analysis
- 9809—Other (specify)

### 373 Soil Specialties

- 72-9901—Fertility, management
- 35-9902—Soil bacteriology
- 55-9903—Soil chemistry
- 53-9904—Soil genesis, classification and mapping
- 40-9905—Soil mechanics and engineering
- 24-9906—Soil mineralogy
- 78-9900—Soil conservation
- 16-9909—Other (specify)

## Engineering

### 24 Aeronautical Engineering

- 1-6Y01—Aerodynamic loads
- 6-6Y02—Aerodynamics
- 1-6Y03—Aircraft fuels combustion
- 1-6Y04—Aircraft structures
- 1-6Y05—Airports, air transport
- 1-6Y06—Compressors, turbines
- 1-6Y07—Flight test and research
- 1-6Y08—Flutter, vibration
- 2-6Y10—Hydrodynamics
- 7-6Y11—Instrumentation
- 1-6Y12—Landing loads
- 6Y13—Propulsion systems, materials, structure
- 2-6Y14—Rotary wing
- 6Y15—Stability, control
- 6Y09—Other (specify)

### 8 Ceramic Engineering

- 1-6X01—Abrasives
- 4-6X02—Clay products
- 6X03—Cements, limes, plasters
- 2-6X04—Glass
- 6X05—Kilns, furnaces

- 1-6X06—Protective and refractory coatings for metals
- 6X07—Refractories
- 6X09—Other (specify)

### 179 Chemical Engineering

- 16-6001—Adsorption and absorption
- 12-6002—Chemical separation
- 4-6003—Electrochemical operations
- 18-6004—Fluid flow
- 30-6005—Heat transfer
- 16-6006—Mass transfer
- 18-6007—Materials handling
- 23-6008—Measurement and control
- 15-6010—Mechanical separation
- 10-6011—Mixing
- 3-6012—Nuclear processes
- 9-6013—Size reduction
- 5-6009—Other (specify)

### 97 Civil Engineering

- 6101—Airport construction
- 1-6102—City planning
- 12-6103—Construction, heavy
- 18-6104—Construction, light
- 25-6105—Dams and stream control
- 6-6106—Highways
- 1-6107—Railroads and terminals
- 24-6108—Reclamation and water use
- 6110—Subways and under-city construction
- 9-6111—Waterways and harbors
- 1-6109—Other (specify)

### 40 Electrical Engineering

- 6-6201—Illumination
- 5-6202—Power generation
- 6-6203—Power transmission and distribution
- 5-6204—Rotating machinery
- 13-6205—Servomechanisms
- 2-6206—Transportation, -traffic
- 1-6207—Wire communication systems
- 2-6209—Other (specify)

### 120 Engineering Mechanics

- 15-6301—Dynamics
- 9-6302—Elasticity
- 18-6303—Fluid dynamics
- 8-6304—Plasticity
- 33-6305—Properties of materials
- 15-6306—Statics
- 20-6307—Thermodynamics
- 2-6309—Other (specify)

### 106 Industrial Engineering

- 16-6401—Engineering economics
- 7-6402—Maintenance engineering
- 15-6403—Operational analysis
- 3-6404—Procurement, accounting
- 7-6405—Production engineering
- 8-6406—Production planning
- 14-6407—Quality control
- 20-6408—Standards, testing of materials
- 15-6410—Time and motion study
- 1-6409—Other (specify)

### 112 Mechanical Engineering

- 16-6501—Air conditioning
- 1-6502—Automotive engineering
- 3-6503—Boilers and steam engineering
- 3-6504—Construction
- 1-6505—Gas turbines
- 5-6506—Internal combustion engines
- 3-6507—Lubrication engineering
- 16-6508—Machine design
- 5-6510—Machine tools
- 26-6511—Materials handling
- 18-6512—Refrigeration
- 6513—Steam engines and turbines
- 10-6514—Textile engineering
- 4-6515—Welding engineering
- 1-6509—Other (specify)

### 3 Metallurgy and Metallurgical Engineering

- 6601—Electrometallurgy
- 6602—Foundry practice
- 6603—Iron and steel extraction
- 2-6604—Metal treatment & fabrication
- 6605—Nonferrous extraction
- 6606—Physical metallurgy
- 6607—Powder metallurgy
- 1-6608—Metallurgy, other (specify)
- 6609—Metallurgical engineering, other (specify)

### 9 Mining and Petroleum Engineering

- 1-6701—Beneficiation
- 2-6702—Open cut mining
- 6703—Petroleum exploration and development
- 1-6704—Petroleum production
- 6705—Petroleum underground storage
- 2-6706—Placer mining
- 1-6707—Underground mining
- 2-6709—Other (specify)

### 118 Sanitary Engineering

- 13-6845—Air pollution
- 16-6802—Insect and rodent control
- 17-6803—Milk and food sanitation
- 7-6804—Radiological health engineering
- 9-6805—Refuse disposal
- 15-6806—Sewage and industrial wastes
- 19-6807—Water pollution control
- 22-6808—Water supply
- 6809—Other (specify)

### 217 Other Engineering

- 74-6901—Agricultural engineering
- 6-6902—Architectural engineering
- 7-6903—Corrosion and preservation
- 4-6904—Fuels and combustion
- 3-6905—Human engineering
- 25-6906—Heat transfer
- 46-6907—Instrumentation and control
- 6908—Marine engineering
- 6-6910—Materials engineering
- 6911—Nuclear engineering
- 8-6912—Process engineering
- 10-6913—Product engineering
- 6-6914—Safety engineering
- 2-6909—Other (specify)

## Social Sciences, Humanities and Other Specialties

### 423

- 5-Y001—Archeology
- 24-Y002—Area studies
- 23-Y003—Business administration
- 32-Y004—Business and commerce
- 103-Y005—Economics
- 10-Y006—Education
- 2-Y007—Fine and applied arts
- 12-Y008—History
- 11-Y010—History of science and mathematics
- 13-Y011—Home economics
- 13-Y012—International relations
- 7-Y013—Journalism
- 7-Y014—Law, jurisprudence
- Y015—Library and archival specialty
- 2-Y016—Music
- 8-Y017—Patent law
- 3-Y018—Philosophy
- 20-Y019—Political science
- 22-Y020—Public administration
- 5-Y021—Religion and theology
- 26-Y022—Sociology
- 16-Y023—Speech
- 7-Y048—Anthropology
- 28-Y052—Scientific and technical documentation
- 15-Y062—Demography
- 4-Y074—Industrial hygiene and occupational health
- 7-Y009—Other (specify)



## SPECIALTIES LIST

## Field of Interest Rank

Basis for Rank as selected for this summary:

Field (Major) Rank from 1-11 -- includes all major categories in the list

Sub-Field (Intermediate)-- Rank from 1-52 -- includes all sub-field groups with 50 or more responses

Specialties (Minor) Rank from 1-76 -- includes all minor groups with 50 or more responses

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Field Major Rank From 1-11	Sub-Field Intermediate Rank From 1-52	Specialties Minor Rank From 1-76
1. Biology Part 1 1/	8. Botany	3. Plant Physiology 15. Nutrition & Growth 41. Plant Anatomy 75. Dendrology
	9. Entomology	24. Control, chemical 27. Agricultural 33. Control, other 40. Insect Pests 48. Forest 65. Insect physiology, morphology
	13. Phytopathology	39. Fungal 52. Disease control, other 57. Disease control, chemical 69. Host resistance
	16. Genetics	8. Plant 53. Population studies
	21. Ecology	6. Plant ecology 58. Animal ecology
	23. Immunology 2/	
	24. Nutrition	38. Animal nutrition 47. Nutrient value of foods
	29. Bacteriology	70. Microbial processes
	48. Pharmacology 2/	
		3. Mathematics and Statistics
		1. Statistics
		40. Photogrammetry, Photo-interpretation, Cartography 2/
		38. Biophysics 2/
		28. Electronics
		15. Physical Chemistry
		12. Soil Specialties
		10. Agriculture and Food Chemistry
		4. Biochemistry
		34. Amino acids, peptides, proteins 55. Enzyme, co-enzyme 62. Carbohydrates 63. Biochemical mechanisms
		25. Pesticides (insect, herbi-, fungicides, etc.) 29. Fertilizers, plant growth regulators
		30. Soil Conservation 36. Fertility, management 61. Soil chemistry 66. Soil genesis, classification and mapping
		None of the 26 items ranked among first minor codes
		71. Instrumental measurement (principally electronic)
		None
		None
		1. Design and analysis of experiments 2. Sampling techniques 5. Survey methods: including forms design, data collection and data processing 7. Analytical statistics 37. Multivariate analysis 46. Estimation and testing, parametric

## Specialties List -- Field of Interest Rank

Field Major Rank From 1-11	Sub-Field Intermediate Rank From 1-52	Specialties Minor Rank From 1-76
3. Mathematics and Statistics	14. Numerical Methods and Computation	43. Digital computers, coding and programming
	17. Mathematics of Resource Use	20. Biometrics, biostatistics
	19. Analysis <u>2/</u> and Functional Analysis	None
	31. Probability	67. Applications of probability
	52. Algebra <u>2/</u>	None
4. Chemistry	2. Organic Chemistry	10. Agricultural chemicals 17. Amino acids and proteins 22. Carbohydrates 49. Oils, fats, waxes 68. Wood, paper and cellulose
	3. Analytical chemistry	4. Chromatographic analysis 35. Absorption spectroscopy 44. Volumetric analysis 59. Solvent Extraction 60. Qualitative analysis 74. Gravimetric analysis
	26. Inorganic chemistry <u>2/</u>	
5. Biology Part 2 <u>3/</u>	5. Forestry and Range	11. Forestry management 23. Silviculture 31. Watershed management 50. Range management 51. Erosion control 64. Forest products 72. Forest protection
	6. Agronomy	12. Field crops 19. Crop breeding, hybridization 21. Crop management 26. Pasture and forage crops 28. Weed control 56. Seeds

## Specialties List -- Field of Interest Rank

Field Major Rank From 1-11	Sub-Field Intermediate Rank From 1-52	Specialties Minor Rank From 1-76
5. Biology Part 2 <u>3/</u>	33. Horticulture <u>2/</u>	
	43. Wildlife <u>2/</u>	
	45. Husbandry <u>2/</u>	
	47. Zoology <u>2/</u>	
	7. Hydrology	9. Soil moisture 18. Evaporation and transpiration 32. Precipitation 54. Erosion and sedimentation 73. Surface waters 76. Ground waters
	6. Geochemistry thru Oceanography <u>4/</u>	
	22. Geology <u>2/</u>	
	30. Geography <u>2/</u>	
	18. Other Engineering	16. Agricultural Engineering
	25. Chemical Engineering <u>2/</u>	
	32. Engineering Mechanics <u>2/</u>	
	34. Sanitary Engineering <u>2/</u>	
	36. Mechanical Engineering <u>2/</u>	
	37. Industrial Engineering <u>2/</u>	
	42. Civil Engineering <u>2/</u>	



## Specialties List -- Field of Interest Rank

## Specialties List -- Field of Interest Rank

- |                                  |  |   |
|----------------------------------|--|---|
| Field<br>Major Rank<br>From 1-11 | Sub-Field<br>Intermediate Rank<br>From 1-52  | Specialties<br>Minor Rank<br>From 1-76  |
| 8. Physics                       | 27. Optics<br>2/<br>46. Thermal<br>Phenomena<br>2/<br>49. Solid State<br>2/<br>50. Physics of<br>Fluids<br>2/<br>51. Mechanics<br>2/ | 5/ Atmospheric Dynamics; Chemistry and Physics; Climatology;<br>Synoptic Meteorology; Area Specializations; Meteorological<br>Instrumentation                   |
|                                  |  | 6/ There was no sub-field (intermediate) for this group.<br>Economics ranked 13 among the specialties (minor) group, and<br>is shown in place of the sub-field. |

## Methods

- |   |   |  |  |
|---|---|--|--|
| 9. Atmospheric<br>Dynamics<br>thru<br>Meteorological<br>Instrumentation   | 20. Climatology   | 14. Microclimatology<br>45. Bioclimatology | When the Requirements Inquiry was pretested it was suggested that the answer to the time in years would be different if one's primary interest was for methods. To find out if this was of significance the means were provided for identifying specialties titles for which methods, procedures, or techniques were of primary concern. (Instruction called for the letter M to be written before the circled code number).   |
|   | 39. Area<br>Special-<br>izations                                  | 42. Agricultural<br>meteorology            | An analysis of survey returns shows that the average number of years for specialty titles marked "M" for methods differed very little from the average years for all reports of methods and non-methods.   |
|   | 41. Atmospheric<br>Dynamics,<br>Chemistry<br>and<br>Physics<br>2/ |  | Summaries of the Specialties List show data for methods, non-methods and totals and are available on EAM print outs for further study. However, for this report an analysis was made of the 75 specialty titles for which 50 or more responses (methods and non-methods) were received.  |
| 10. Social Sciences,<br>Humanities and<br>other<br>Specialties  | 11. Social Sciences.  |  | Of the 12 top ranking specialties titles (titles with 100 or more responses) there were 5 titles for which the number reporting methods exceeded the number not reporting methods. Of the 63 specialty titles with from 50 to 99 responses there were only 10 for which the number reporting methods exceeded the number not reporting methods.  |
|   |   | 13. Economics                              | Table SP-8 shows the number of responses and age of material for these 15 titles which were important for methods. For most of these titles the age of material for methods was about 1 year older than for all reports (methods and non-methods). In four instances the age for all reports was greater than for methods but the differences were small, ranging from 0.3 to 2.1 years. It appears that the age of material does not depend on whether the primary interest is for methods. |
| 11. Psychology  | 35. Industrial<br>and<br>Personnel<br>Psychology<br>2/            |  | Judging from the 15 titles listed in table SP-9 the specialties for which methods were important were in the two major fields of Chemistry and Mathematics - Statistics.   |
| 1/ Anatomy, Bacteriology, Botany, Ecology, Entomology, Genetics,<br>Immunology, Nutrition, Pathology, Pharmacology, Physiology,<br>Phytopathology |   |  |  |
| 2/ No specialties with 50 or more responses   |   |  |  |
| 3/ Virology, Zoology, Agronomy, Animal Husbandry, Fish and Wildlife,<br>Forestry and Range, Horticulture  |   |  |  |
| 4/ Geochemistry, Geodesy, Geology, Paleontology and Paleobotany, Solid-<br>earth Geophysics, Geography, Hydrology, Oceanography                   |   |  |  |

## Specialties List -- Methods compared with Total

Table SP-9

Specialties for which the number reporting

Methods exceeded the number reporting Non-methods 1/

Specialty Code	Title	Number of responses and age of material				
		Methods		Total		Diff. in
		No.	Av. Yrs.	No.	Av. Yrs.	Av. Yrs. <u>2/</u>
0003	Analytical Chemistry-- Chromatographic Analysis	110	7.6	158	6.5	1.1
	Statistics:					
2801	Analytical statistics	66	13.3	128	12.2	1.1
2803	Design and analysis of experiments	152	13.6	256	12.7	0.9
2808	Sampling techniques	121	12.8	218	11.9	0.9
2810	Survey methods	88	10.4	152	10.3	0.1
	Analytical Chemistry:					
0007	Gravimetric analysis	34	14.1	50	14.7	* 0.6
0012	Qualitative "	39	14.4	59	15.9	* 1.5
0013	Solvent Extraction	41	9.7	56	10.1	0.4
0014	Volumetric anal.	47	12.5	67	14.6	* 2.1
	Math. of Resource Use--					
2303	Biometrics, Biostatistics	53	12.0	90	11.1	0.9
	Numerical Methods --					
2504	Digital computers, coding & programming	43	5.9	63	5.6	0.3
	Probability --					
2702	Application of Prob.	35	10.8	53	10.5	0.3
	Statistics:					
2804	Estimating & Testing, parametric	41	15.9	65	14.8	1.1
2805	Multivariate anal.	44	11.0	71	11.3	* 0.3
	Electronics --					
9406	Instrumental measurement	29	10.8	52	11.4	0.6

1/ Considered only specialties with 50 or more total responses of methods and non-methods excluding reports which did not show years.

2/ For the specialty titles marked \* the average age of material for methods is less than the average age for all responses; for unmarked titles the age for methods is greater than the age for all responses.



## SUMMARY

The purpose of including the specialties list in the survey was to obtain some idea of the age of scientific publication that most scientists are likely to be using in their work and to see how this varies from discipline to discipline. An additional item to be derived from this material is the relative importance of the various fields of interest as related to disciplines.

The remarkable thing about all of the results dealing with the specialties list was the relative uniformity of agreement of the age of publications most frequently used. In nearly all cases, the scientists agreed that the rate of consulting publications equal to or less than 15 years old declined in a rather steep linear fashion. Between 15 and 30 years the slope of the line was not as pronounced and after 30 years the need tended to level out to nearly a straight line. Therefore, the two pronounced breaking points in these graphs are 15 and 30 years with about 50 percent of the respondents needs fulfilled at 15 years and 80 percent filled at 30 years.

The four highest of the eleven major fields of interest ranked in their order of importance are: (1) Biology, part 1, (2) Interdisciplinary specialties, (3) Mathematics and statistics, and (4) Chemistry. The ten high ranking sub-fields of interest in order of importance are: (1) Statistics, (2) Organic chemistry, (3) Analytical chemistry, (4) Biochemistry, (5) Forestry and range conservation, (6) Agronomy, (7) Hydrology, (8) Botany, (9) Entomology, and (10) Agriculture and food chemistry.

## TABLES AND CHARTS

Interest Scope:

The fields of interest for each of the 10 discipline groups are show in table R33 and charts R35 and R36. The responses for the 11 major fields of interest are expressed as percentages which add to 100 percent for each discipline group. In chart R35, the bars identify the fields of interest within each discipline while in Chart R36, the bars identify the disciplines within each field of interest. Both charts are based on the same data as described above.

Age of Material for all disciplines:

The percentage of respondents needing access to material by 5 year intervals is shown for 10 major field groups. Chart R37 shows lines for all 10 major fields without identifying the groups, while charts R38 and R39 show the items identified. Likewise for the sub-fields. Chart R40 shows the lines for 26 important sub-fields. Charts R41-R47 identify the 26 sub-fields, with no more than 5 sub-fields (lines) on one chart.

Age of Material -- discipline group compared with all disciplines:

Table R34 and charts R48-R60 shows the age of material in sub-fields of interest, comparing all disciplines with selected disciplines for a particular sub-field. All disciplines with 99 or more responses within a sub-field were selected to be compared with all disciplines. In most cases only one discipline group qualified within a sub-field of interest. Exceptions were the statistics field of interest for which there were two discipline groups with 99 or more responses, namely group 1. Economists, etc. and group 5. Forestry; and the geochemistry through oceanography field of interest with disciplines group 5. Forestry and group 8, 9, engineers. With few exceptions the age of material line for the important discipline group overlapped the line for all discipline groups, or showed the same slope, although on a little different level.

# LIST OF CHARTS AND STATISTICAL TABLES

## FIELDS OF INTERESTS

Table	R33	Major Fields of Interest by the Scientists Disciplines group as a percentage of total Responses for each discipline
	R34	Age of material in Sub-Fields of Interest - Discipline group compare with all scientists
Fig.	R35	Major Fields of Interest in each Discipline. Responses for each Discipline equal 100 percent
	R36	Discipline in each Major field of Interest. From same statistics as

### Age of Material in Major Fields of Interest

Fig.	R37	All 10 major fields
	R38	5 major fields
	R39	5 major fields

### Age of Material in Selected Sub-Fields of Interest

Fig.	R40	All 26 sub-fields
	R41	Biology part 1, 5 sub-fields
	R42	Biology part 1, 4 sub-fields
	R43	Interdisciplinary specialties, 4 sub-fields
	R44	Interdisciplinary specialties, 3 sub-fields
	R45	Math and Statistics, 4 sub-fields
	R46	Chemistry, 3 sub-fields
	R47	Biology, Part 2, 3 sub-fields

### Age of Material in sub-fields - Discipline group closely related to the sub-fields compared with all scientists

#### FIELD OF INTEREST

	<u>Major Field</u>	<u>Sub-Field</u>	<u>Related Disciplines</u>
Fig.	R48	Chemistry	Analytical Chemistry
	R49	Chemistry	Organic Chemistry
	R50	Interdisciplinary	Agr. and Food Chemistry
	R51	Interdisciplinary	Biochemistry
	R52	Interdisciplinary	Physical Chemistry
	R53	Interdisciplinary	Soil Specialties
	R54	Biology, Part 1	Botany
	R55	Biology, Part 1	Phytopathology
	R56	Biology, Part 1	Entomology
	R57	Biology, Part 2	Forestry and Range
	R58	Biology, Part 2	Agronomy
	R59	Math. and Statistics	Statistics
			(10) Chemistry, Physics
			(10) Chemistry, Physics
			(10) Chemistry, Physics
			(10) Chemistry, Physics
			(10) Chemistry, Physics
			( 6) Soil Science, geology
			( 5) Forestry
			( 3) Plant pathology, physiology
			( 2) Entomology, Nematology
			( 5) Forestry
			( 4) Agronomy, Horticulture
			( 1) Agricultural Economics
			( 5) Forestry
	R60	Geochemistry thru Oceanography	Hydrology
			( 5) Forestry
			(7, 8, 9) Engineering

Tables	R61-70	Summary of age of material and year intervals for major fields and specified sub-fields
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Fig.	71	Footnotes to Tables R61-70
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MAJOR FIELDS OF INTEREST BY THE SCIENTIST'S DISCIPLINE GROUPS

TABLE R33

Percent of Total Responses for Each Discipline

Discipline Field of Interest 2/ Code	Civil Service Class Series 1/										
	1 Agriculture Economics, Home Econ.	2 Entomology	3 Plant Physiology Bacteriology	4 Agronomy Horticulture	5 Forestry	6 Soil Science	7,8,9 Engineering	10 Chemistry	11 Technology	12 Genetics Husbandry	All Discipline
3 Atmospheric, etc.	2.0	2.4	2.5	6.1	6.8	7.2	6.0	2.3	2.4	1.5	4.3
1 Geochemistry, etc.	6.1	2.4	0.7	4.2	11.7	21.9	12.0	0.6	1.6	1.3	7.4
4 Physics	0.4	1.2	2.0	0.7	3.2	6.0	9.4	6.3	2.4	3.4	4.4
0 Chemistry	1.8	10.3	10.2	3.7	2.1	10.1	5.1	40.2	14.3	7.5	12.4
2 Math. & Statistics	34.7	10.7	3.5	7.6	19.4	12.3	16.4	5.2	19.8	13.4	14.2
7 Biology, Part 1	5.7	50.8	51.1	38.7	16.8	6.0	3.2	11.6	12.7	40.3	19.0
8 Biology, Part 2	11.9	11.0	10.2	24.1	21.8	9.5	7.9	2.0	10.3	13.8	11.3
9 Inter Disciplinary	10.2	9.5	18.7	9.6	9.5	20.1	10.2	28.3	18.3	15.1	15.6
6 Engineering	4.7	1.4	0.8	1.1	3.3	5.9	27.5	3.1	10.3	1.1	7.1
Y Social Science	16.4	0.3	0.3	1.8	3.3	1.0	0.9	0.4	0	0	2.7
5 Psychology	6.1	0	0	2.4	2.1	0	1.4	0	7.9	2.6	1.6
All Fields											
(sum of above)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Responses	1032	654	753	541	1553	982	1553	1859	126	614	9667
No. of Scientists reporting	104	77	85	55	123	41	80	161	13	51	790
Responses per scientist	9.9	8.5	8.9	9.8	12.6	24.0	19.4	11.5	9.7	12.0	12.2

1/ Class series names are shown in the heading for classes with more than 50 USDA Scientists in the population.

2/ For complete description of field of interest see the specialties list and text on method of analysis.

SPECIALTIES LIST -- SUB-FIELDS  
Discipline Group Field of Interest Compared with all Scientists  
Respondents Wanting Access to Material Published Within Dates

TABLE R34

Percent of Total Responses

Age of Material	Years Measured From 1962	Chemistry Sub-Fields			
		Analytical Chemistry (00)		Organic Chemistry (02)	
		Discipline		Discipline	
		All	Chemistry, Physics (Group 10)	All	Chemistry, Physics (Group 10)
		%	%	%	%
0	(1962)	100.0	100.0	100.0	100.0
5		87.5	88.3	83.6	84.8
10	(1952)	67.0	68.7	69.2	70.6
15		37.4	35.4	46.6	48.0
20	(1942)	29.8	28.9	38.0	41.4
25		17.8	17.5	24.7	28.7
30	(1932)	9.5	12.0	15.2	21.3
35		5.9	7.2	8.3	11.5
40	(1922)	5.9	7.2	8.1	11.3
45		4.9	5.8	7.0	9.8
50	(1912)	4.9	5.8	7.0	9.8
More than 50		0	0	0.8	1.2
Number of Responses					
Showing age of material		473	291	640	408
Averages:					
Mode - Year		10.0	10.0	10.0	10.0
Mean - Year		13.8	14.1	15.9	17.4

Age of Material	Years Measured From 1962	Interdisciplinary Sub-Fields							
		Agriculture and Food Chemistry (91)		Biochemistry (92)		Physical Chemistry (97)		Soil Specialties (99)	
		Discipline		Discipline		Discipline		Discipline	
		All	Chemistry, Physics (Group 10)	All	Chemistry, Physics (Group 10)	All	Chemistry, Physics (Group 10)	All	Soil Science, Geology (Group 06)
		%	%	%	%	%	%	%	%
0	(1962)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
5		86.1	85.3	82.0	83.2	88.7	85.4	88.4	81.7
10	(1952)	68.2	74.3	65.9	69.7	79.4	78.4	79.6	75.0
15		46.0	45.9	41.8	44.3	49.0	45.4	67.6	64.4
20	(1942)	43.2	44.0	34.1	36.1	41.7	37.7	56.7	59.6
25		27.5	26.6	16.3	16.4	22.5	18.5	39.3	40.4
30	(1932)	15.7	18.3	9.6	11.5	15.7	13.8	21.1	25.0
35		9.9	11.9	6.0	5.8	10.8	8.5	17.5	24.0
40	(1922)	9.9	11.9	5.8	5.8	10.3	8.5	17.5	24.0
45		7.1	5.5	3.8	5.3	8.8	7.7	14.2	16.3
50	(1912)	7.1	5.5	3.8	5.3	8.8	7.7	13.8	15.4
More than 50		1.2	2.8	0	0	0.5	0.8	1.5	3.8
Number of Responses									
Showing age of Material		324	109	416	208	204	130	275	104
Averages:									
Mode - Yr.		10.0	10.0	10.0	10.0	10.0	10.0	25.0	20.0
Mean - Yr.		16.7	17.5	13.8	14.5	17.3	16.3	21.7	23.4



## Percent of Total Responses

Age of Material Years Measured From 1962	Biology, Part I									
	Botany (70)				Phytopathology (79)				Entomology (72)	
	Discipline		Discipline		Discipline		Discipline		Discipline	
	All	Forestry (Group 05)	All	Plant Pathology, Physiology, etc. (Group 03)	All	Entomology Nematology (Group 02)	All	Entomology Nematology (Group 02)	All	Entomology Nematology (Group 02)
	%	%	%	%	%	%	%	%	%	%
0 (1962)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
5	90.8	96.4	87.7	87.1	86.3	87.4				
10 (1952)	77.4	88.4	76.6	76.6	73.0	78.7				
15	61.8	72.3	52.8	52.4	53.2	62.2				
20 (1942)	56.8	67.0	46.5	46.8	49.1	56.3				
25	42.4	52.7	35.3	36.3	37.2	45.4				
30 (1932)	28.2	38.4	23.4	29.0	18.3	23.0				
35	23.2	38.4	17.8	25.6	15.4	20.7				
40 (1922)	23.2	29.5	17.5	25.0	15.4	20.7				
45	20.5	26.8	16.4	25.0	13.4	18.4				
50 (1912)	20.5	26.8	16.4	25.0	13.4	18.4				
More than 50	5.0	1.8	2.6	5.6	1.7	2.9				
Number of Responses Showing Age of material	380	112	269	124	344	174				
Averages:										
Mode - Year	--	50.0	10.0	10.0	10.0	10.0				
Mean - Year	25.3	27.0	21.0	24.4	19.4	22.4				
Age of Material Years Measured From 1962	Biology - Part 2 Sub-Fields (8)				Math. & Statistics Sub-Fields (2)			Geochemistry through Oceanography Sub-Fields (1)		
	Forestry & Range (87)		Agronomy (84)		Statistics (28)			Hydrology (16)		
	Discipline		Discipline		Discipline			Discipline		
	All	Forestry (Group 05)	All	Agronomy Horticult (Group 04)	All	Forestry (Group 05)	Agriculture Economics, etc. (Group 01)	All	Agriculture Engineering etc. (Groups 7,8,9)	Forestry (Group 05)
	%	%	%	%	%	%	%	%	%	%
0 (1952)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
5	88.4	90.2	86.9	77.8	91.7	92.3	86.1	93.3	89.4	98.5
10 (1952)	79.4	82.0	68.8	66.7	78.6	79.9	61.2	80.1	78.8	87.1
15	59.7	66.0	48.7	52.5	51.9	49.5	38.8	66.4	59.1	76.5
20 (1942)	54.7	61.1	42.7	49.5	44.8	43.3	30.9	63.2	55.3	73.5
25	40.0	46.3	28.9	38.4	26.7	22.7	21.2	46.3	41.7	55.3
30 (1932)	24.2	27.9	11.1	15.2	11.1	8.2	10.9	24.9	22.0	25.8
35	18.2	19.7	9.5	13.1	7.4	2.1	9.1	20.6	15.2	22.7
40 (1922)	18.2	19.7	9.5	13.1	7.0	1.0	9.1	20.6	15.2	22.7
45	15.9	16.8	7.8	12.1	6.1	0	8.5	18.9	15.2	19.7
50 (1912)	15.9	16.8	7.8	12.1	6.1	0	8.5	18.9	15.2	19.7
More than 50	1.7	16.8	0.8	2.0	0.7	0	0	1.5	1.5	3.0
Number of Responses	422	244	398	99	748	194	165	402	132	132
Averages:										
Mode - Year	10.0	25.0	10.0	25.0	10.0	10.0	5.0	25.0	10.0	25.0
Mean - Year	21.2	22.8	16.5	18.3	17.1	15.2	14.5	23.2	22.9	25.7

# MAJOR FIELDS OF INTEREST IN EACH DISCIPLINE

Responses for each Discipline= 100%

- Fields of Interest:
1. Atmospheric, etc.
  2. Geochemistry, etc.
  3. Physics
  4. Chemistry
  5. Math. & Statistics
  6. Biology, part 1
  7. Biology, part 2
  8. Interdisciplinary
  9. Engineering
  10. Social Sciences

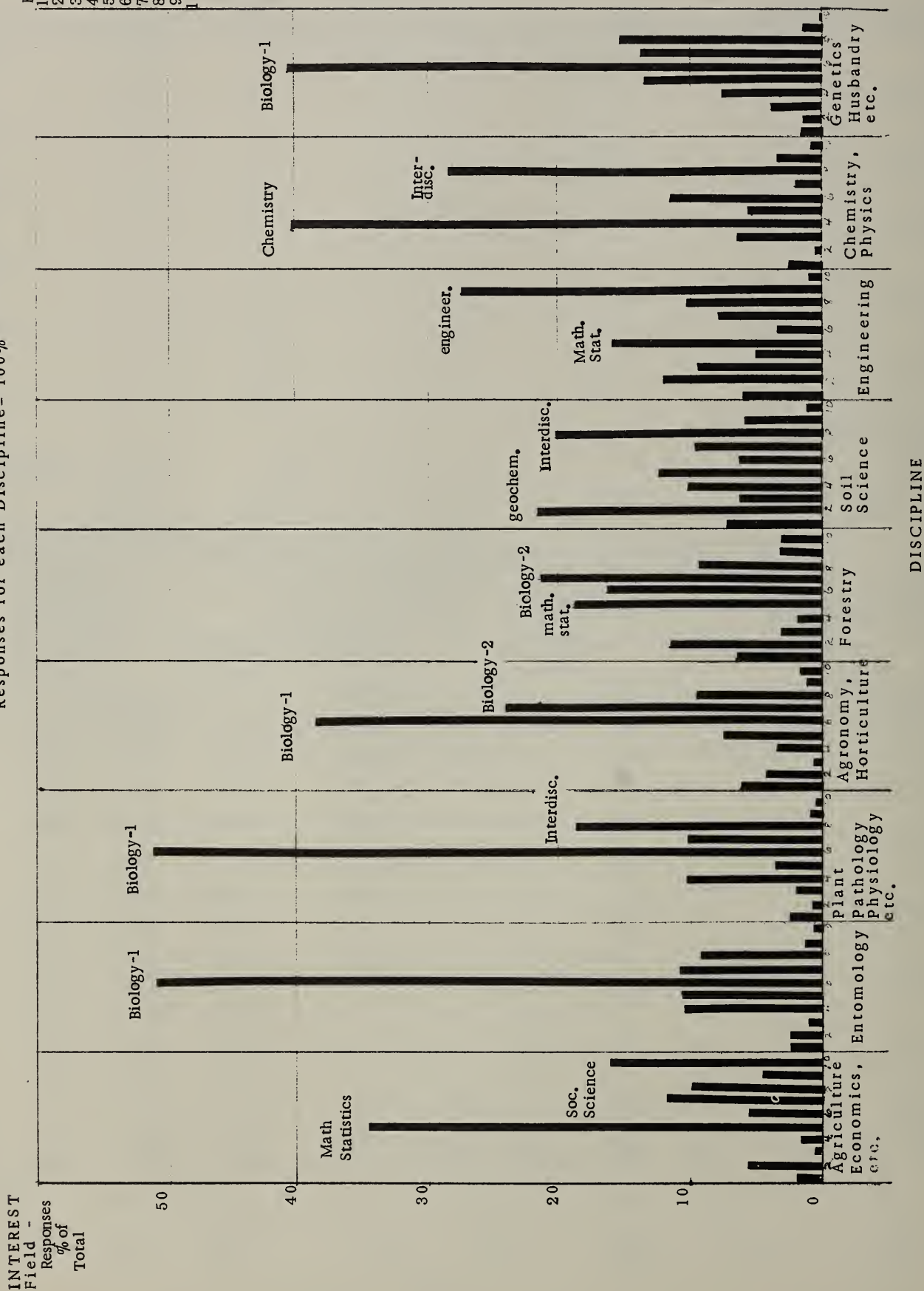
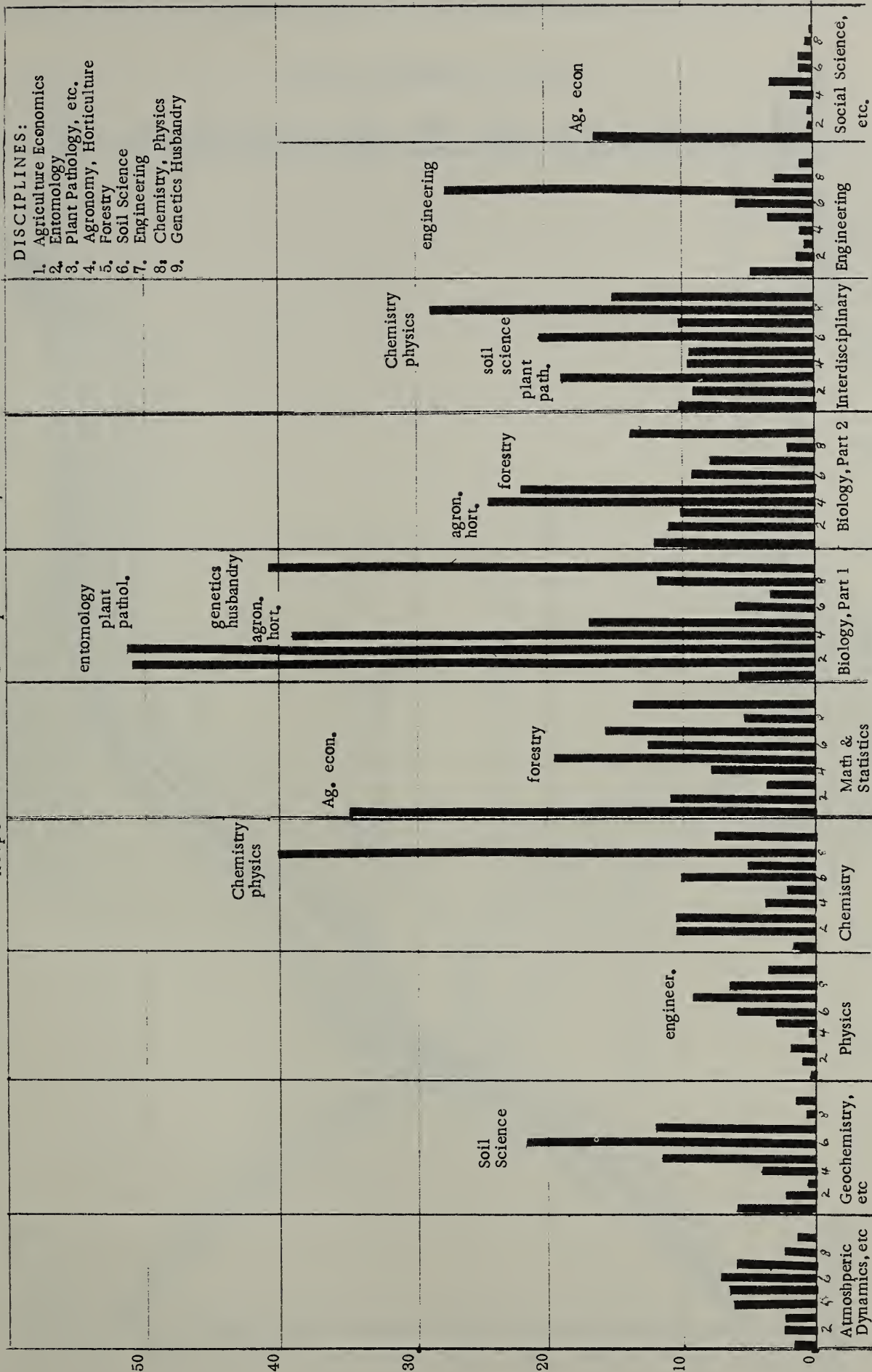




FIG. R36

DISCIPLINE  
IN EACH MAJOR FIELD OF INTEREST  
Responses for each Discipline = 100%

DISCIPLINE  
Responses  
% of  
Total



FIELD OF INTEREST

# AGE OF MATERIAL IN FIELDS OF INTEREST

## MAJOR FIELDS, ALL ITEMS

USDA Research Workers Requirements  
for access to material published within  
dates measured from date of survey - 1962

Respondents needing  
access as percent of  
total respondents

Respondents whose needs  
are fulfilled as percent of  
total respondents

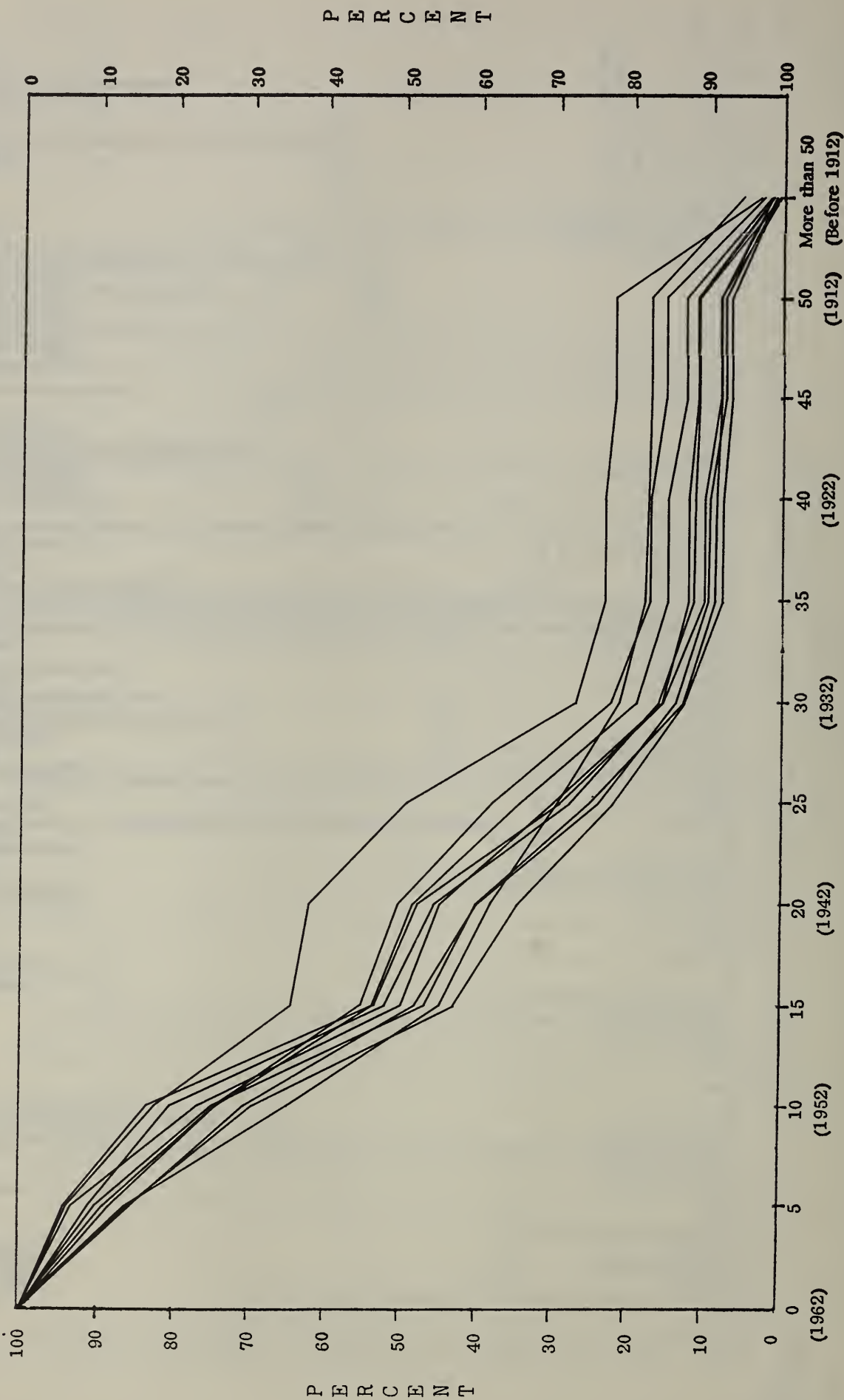


Fig. R 37



# AGE OF MATERIAL IN FIELDS OF INTEREST

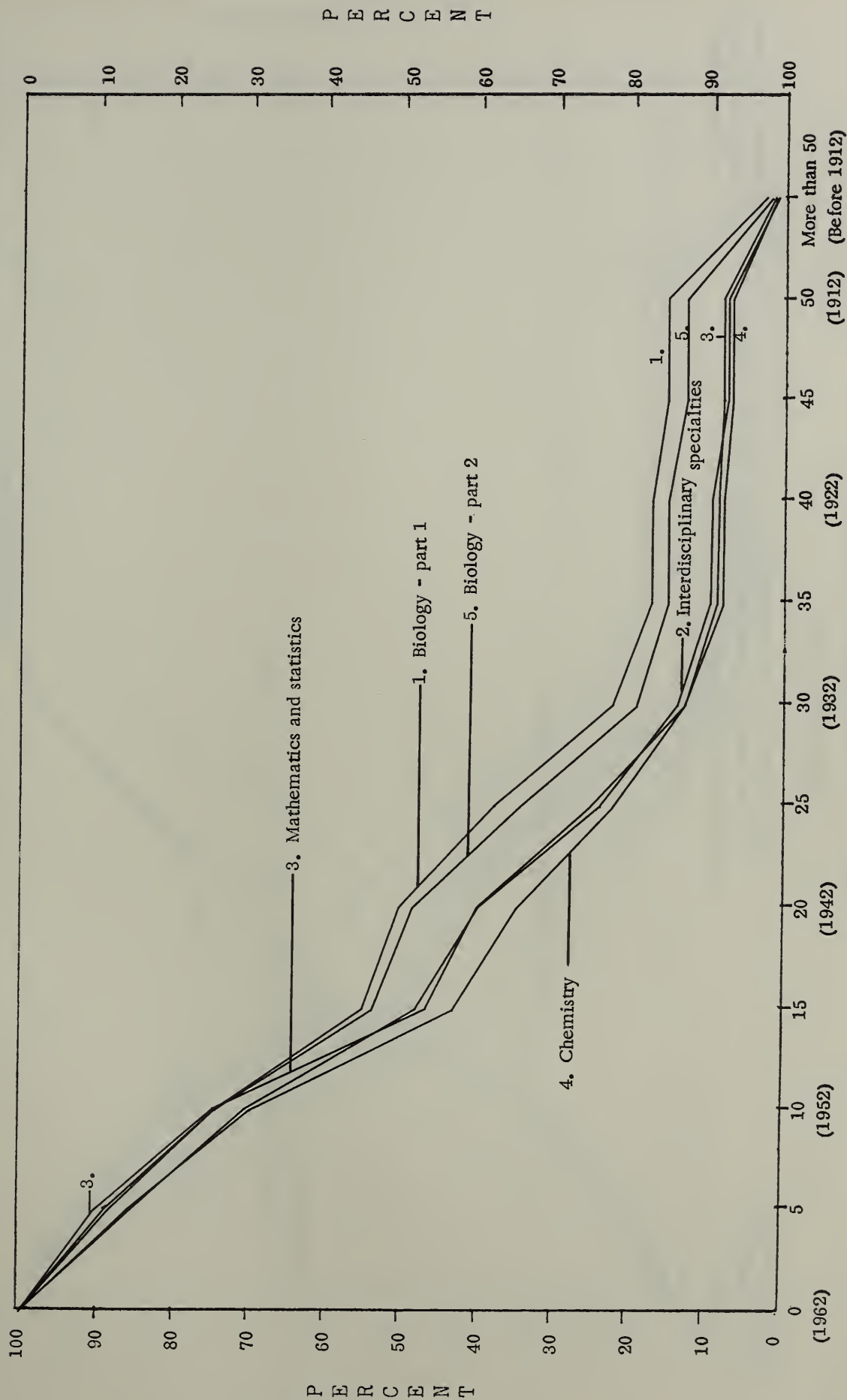
Fig. R 38

## MAJOR FIELDS

USDA Research Workers Requirements  
for access to material published within  
dates measured from date of survey - 1962

Respondents needing  
access as percent of  
total respondents

Respondents whose needs  
are fulfilled as percent of  
total respondents



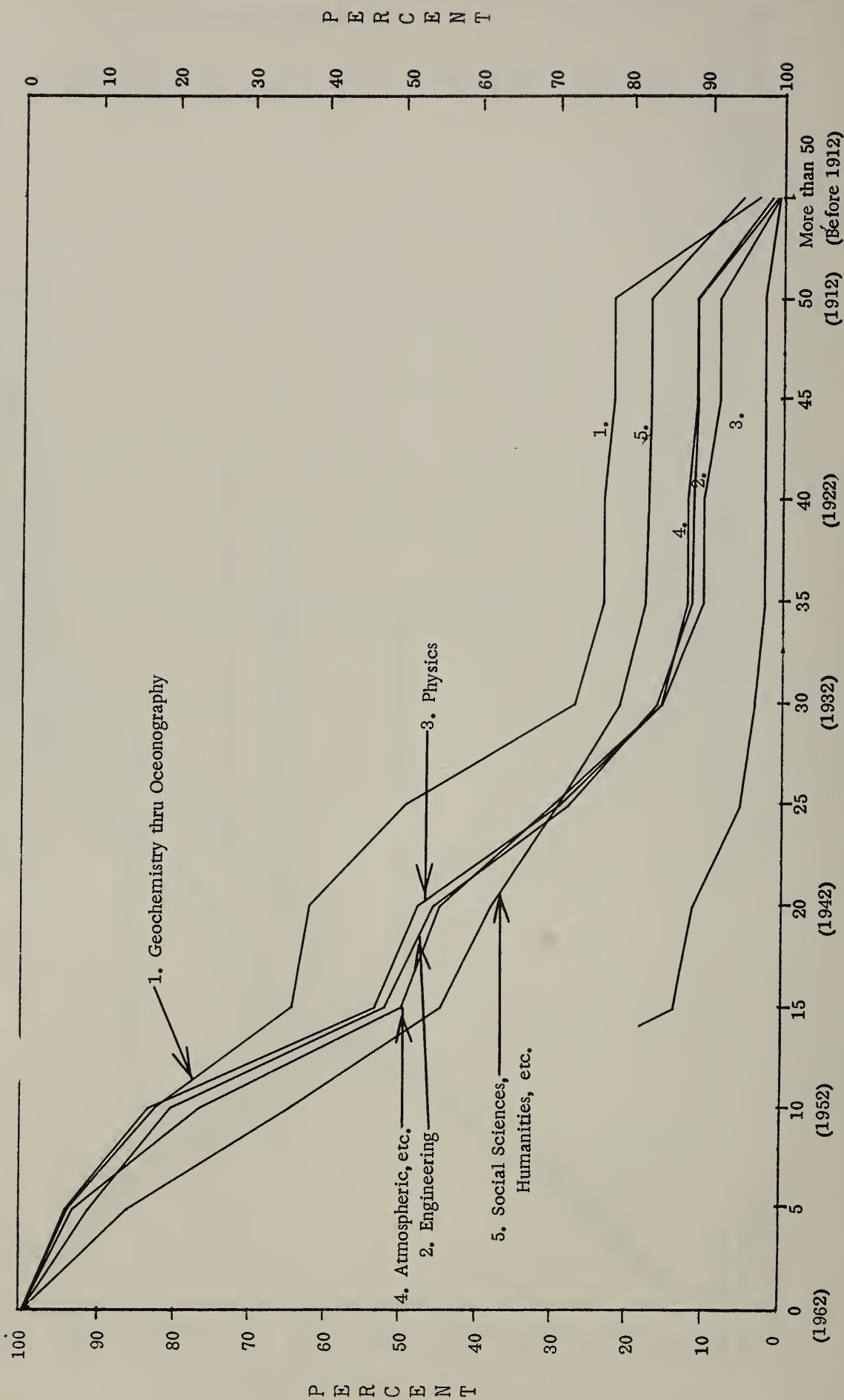
# AGE OF MATERIAL IN FIELDS OF INTEREST

## MAJOR FIELDS (cont.)

Respondents needing access as percent of total respondents

USDA Research Workers Requirements for access to material published within dates measured from date of survey - 1962

Respondents whose needs are fulfilled as percent of total respondents



Years within dates measured from 1962

Fig. R 39



# AGE OF MATERIAL IN FIELDS OF INTEREST

## SUB-FIELDS, ALL ITEMS

USDA Research Workers Requirements  
for access to material published within  
dates measured from date of survey - 1962

Respondents needing  
access as percent of  
total respondents

Respondents whose needs  
are fulfilled as percent of  
total respondents

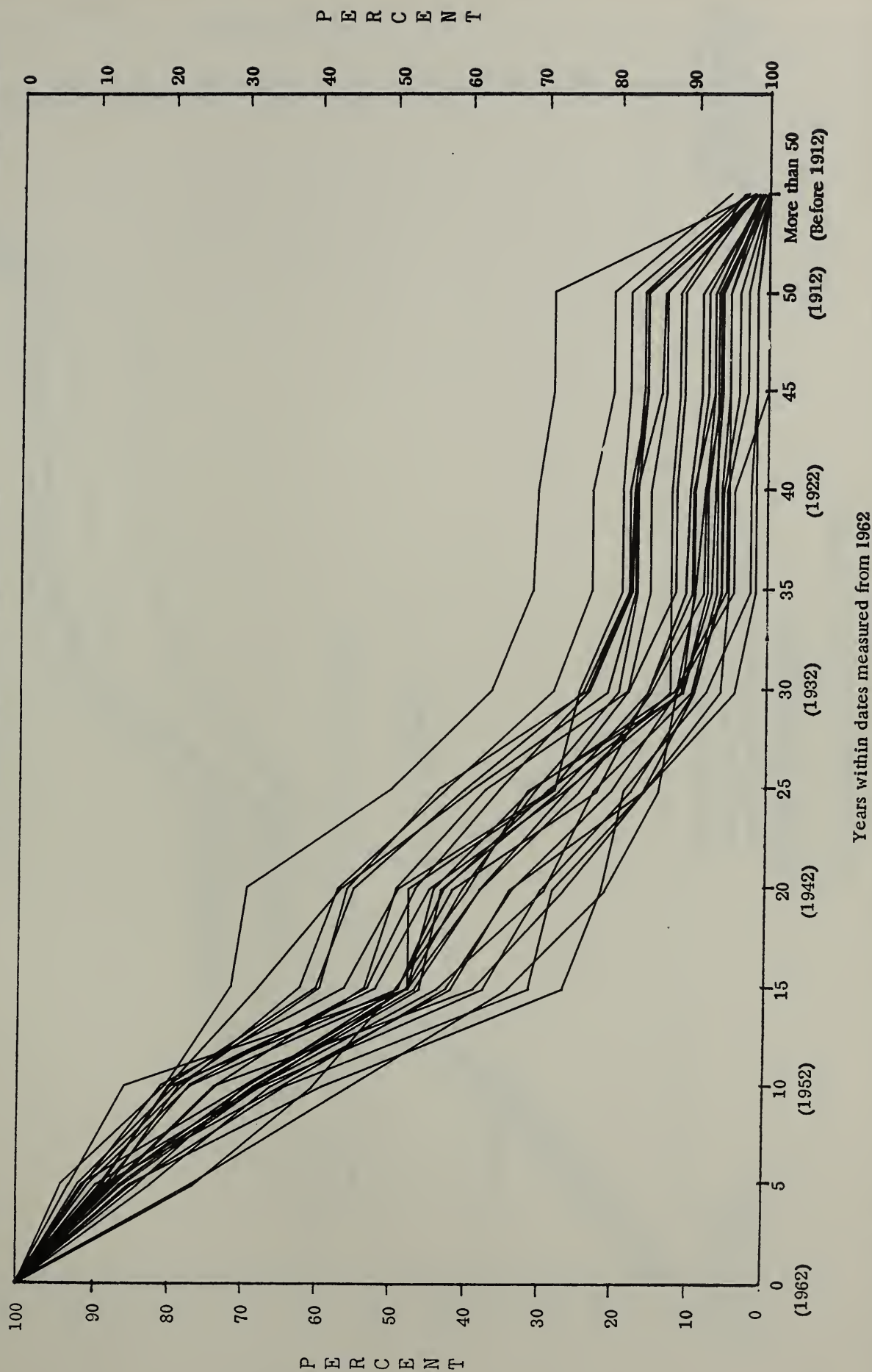


Fig. R 40

# AGE OF MATERIAL IN FIELDS OF INTEREST

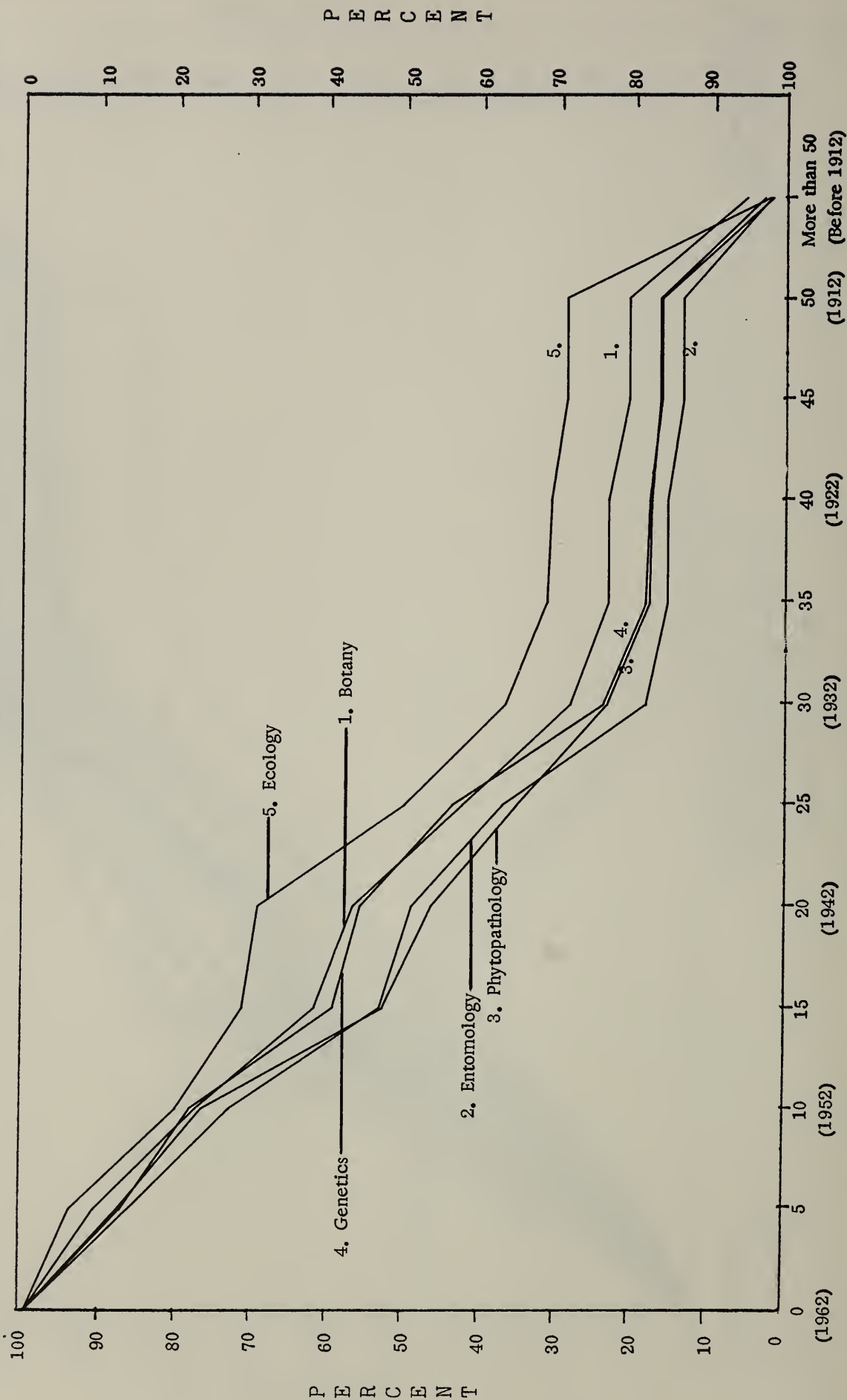
Fig. R 41

## BIOLOGY (Part 1) SUB-FIELDS

Respondents needing  
access as percent of  
total respondents

USDA Research Workers Requirements  
for access to material published within  
dates measured from date of survey - 1962

Respondents whose needs  
are fulfilled as percent of  
total respondents



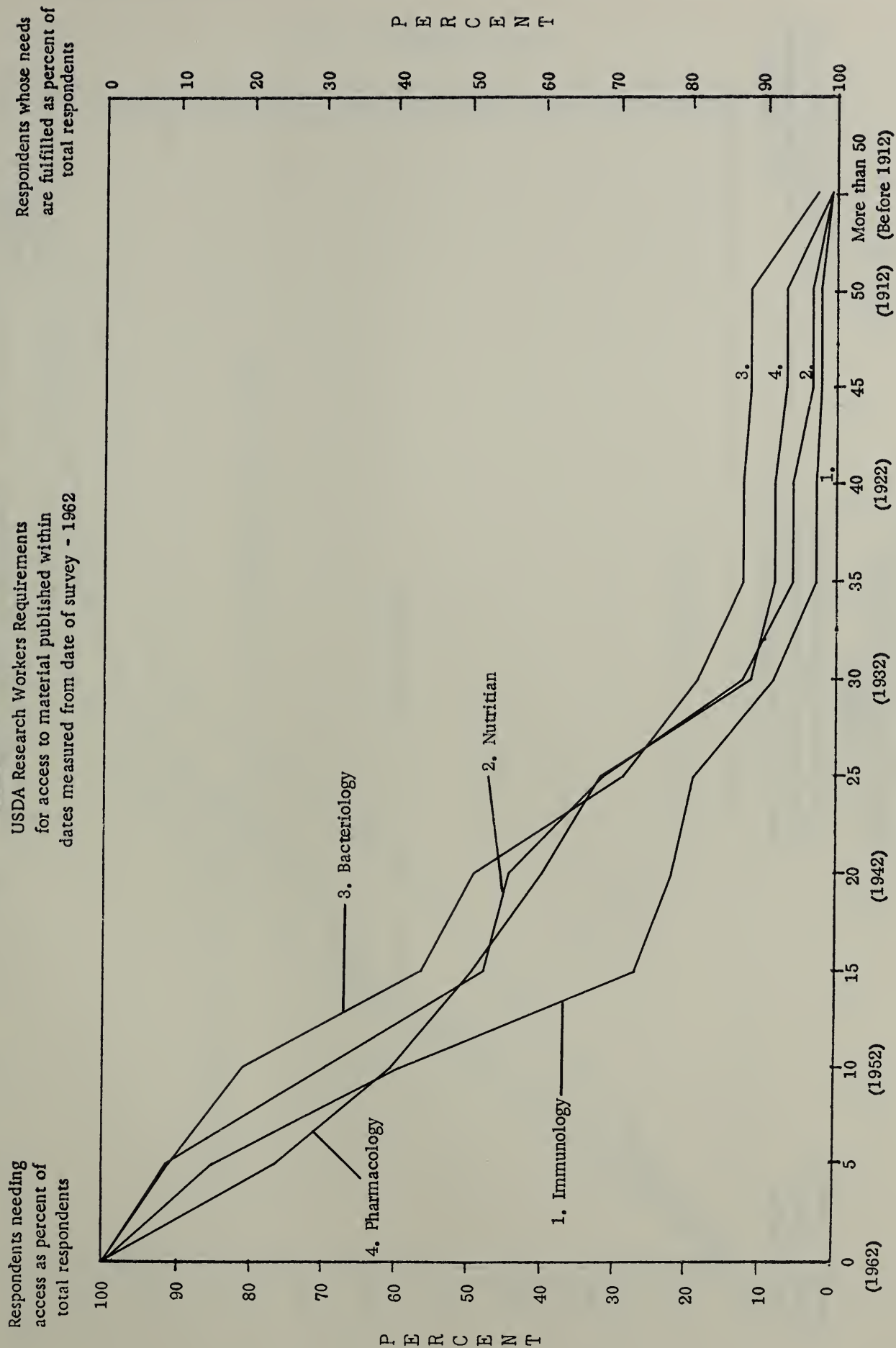


# AGE OF MATERIAL IN FIELDS OF INTEREST

Fig. R 42

## BIOLOGY (Part 1) SUB-FIELDS (cont.)

USDA Research Workers Requirements  
for access to material published within  
dates measured from date of survey - 1962

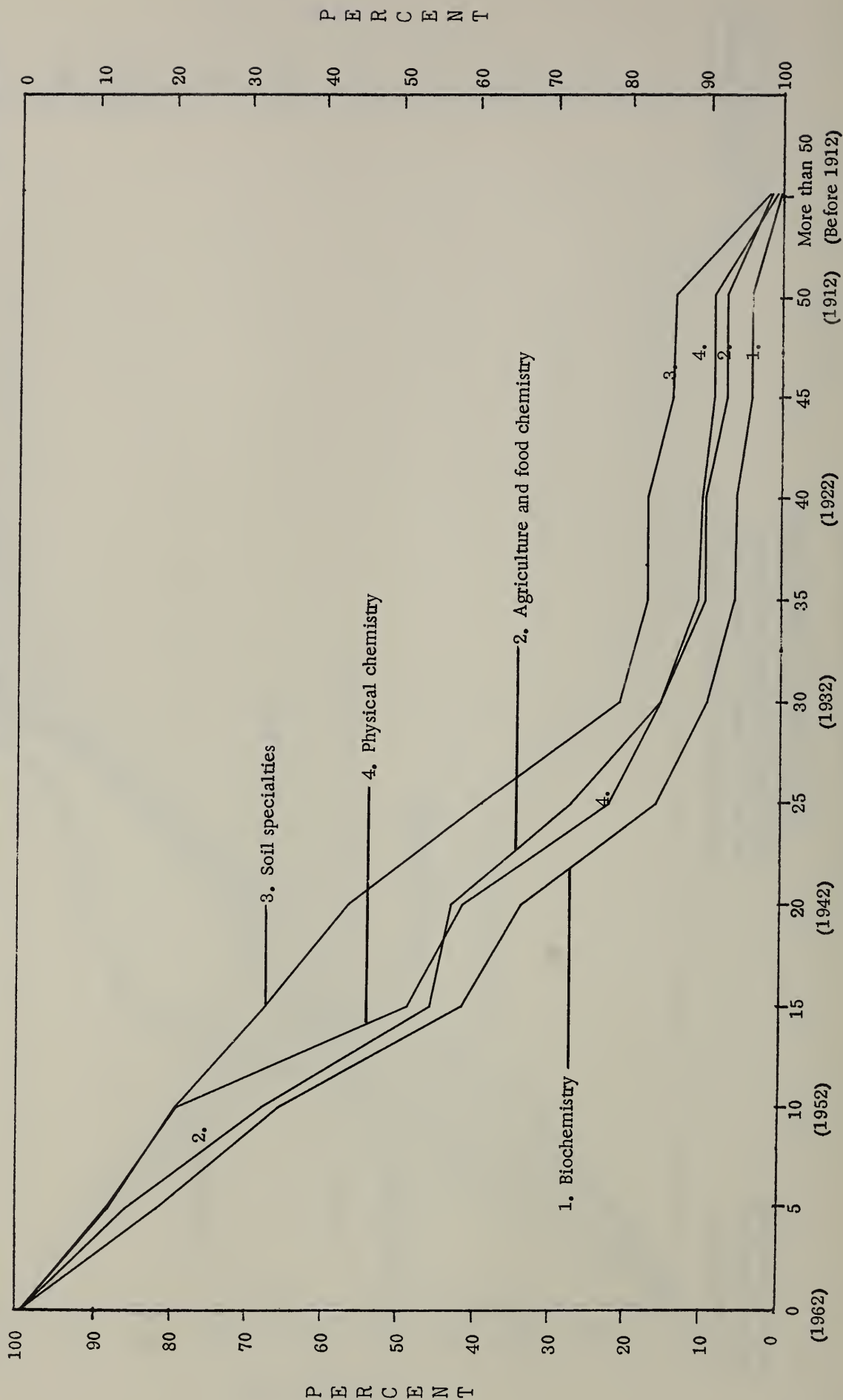


AGE OF MATERIAL IN FIELDS OF INTEREST  
INTER-DISCIPLINARY SPECIALTIES  
SUB-FIELDS

USDA Research Workers Requirements  
for access to material published within  
dates measured from date of survey - 1962

Respondents needing  
access as percent of  
total respondents

Respondents whose needs  
are fulfilled as percent of  
total respondents



Years within dates measured from 1962

Fig. R 43



AGE OF MATERIAL IN FIELDS OF INTEREST  
INTERDISCIPLINARY SPECIALTIES (cont.)

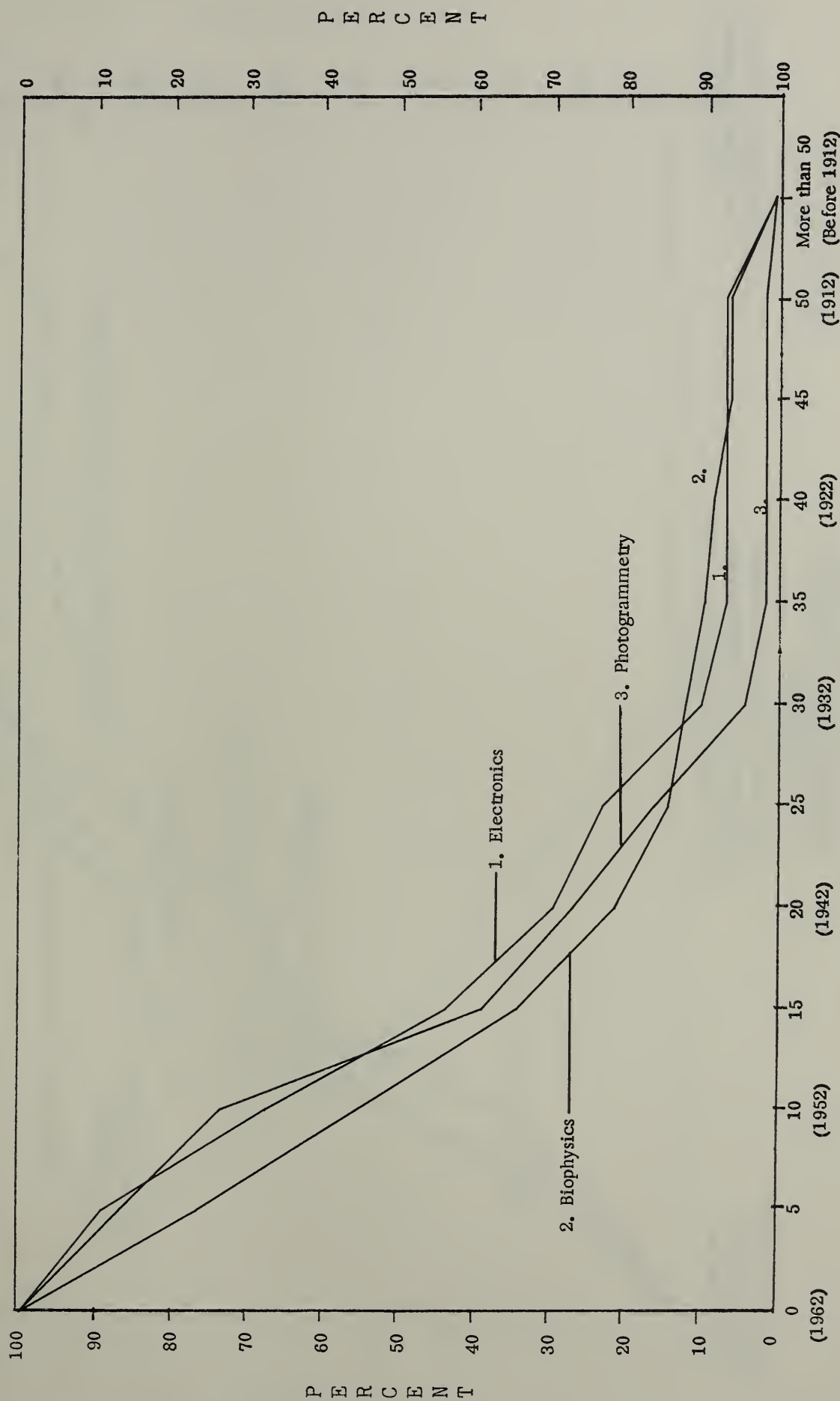
Fig. R 44

SUB-FIELDS

USDA Research Workers Requirements  
for access to material published within  
dates measured from date of survey - 1962

Respondents needing  
access as percent of  
total respondents

Respondents whose needs  
are fulfilled as percent of  
total respondents

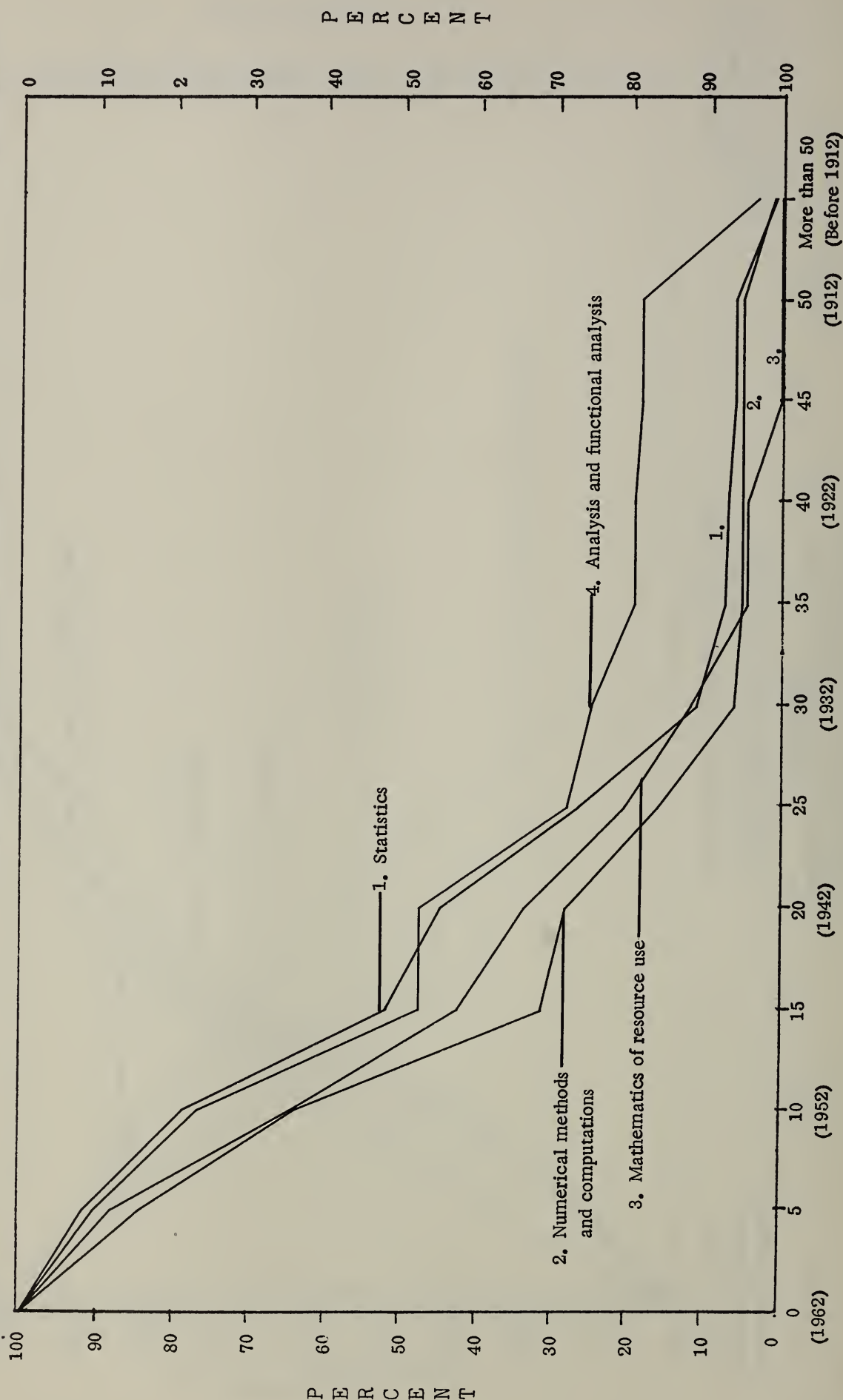


AGE OF MATERIAL IN FIELDS OF INTEREST  
MATHEMATICS AND STATISTICS  
SUB-FIELDS

USDA Research Workers Requirements  
 for access to material published within  
 dates measured from date of survey - 1962

Respondents whose needs  
 are fulfilled as percent of  
 total respondents

Respondents needing  
 access as percent of  
 total respondents



Years within dates measured from 1962



# AGE OF MATERIAL IN FIELDS OF INTEREST

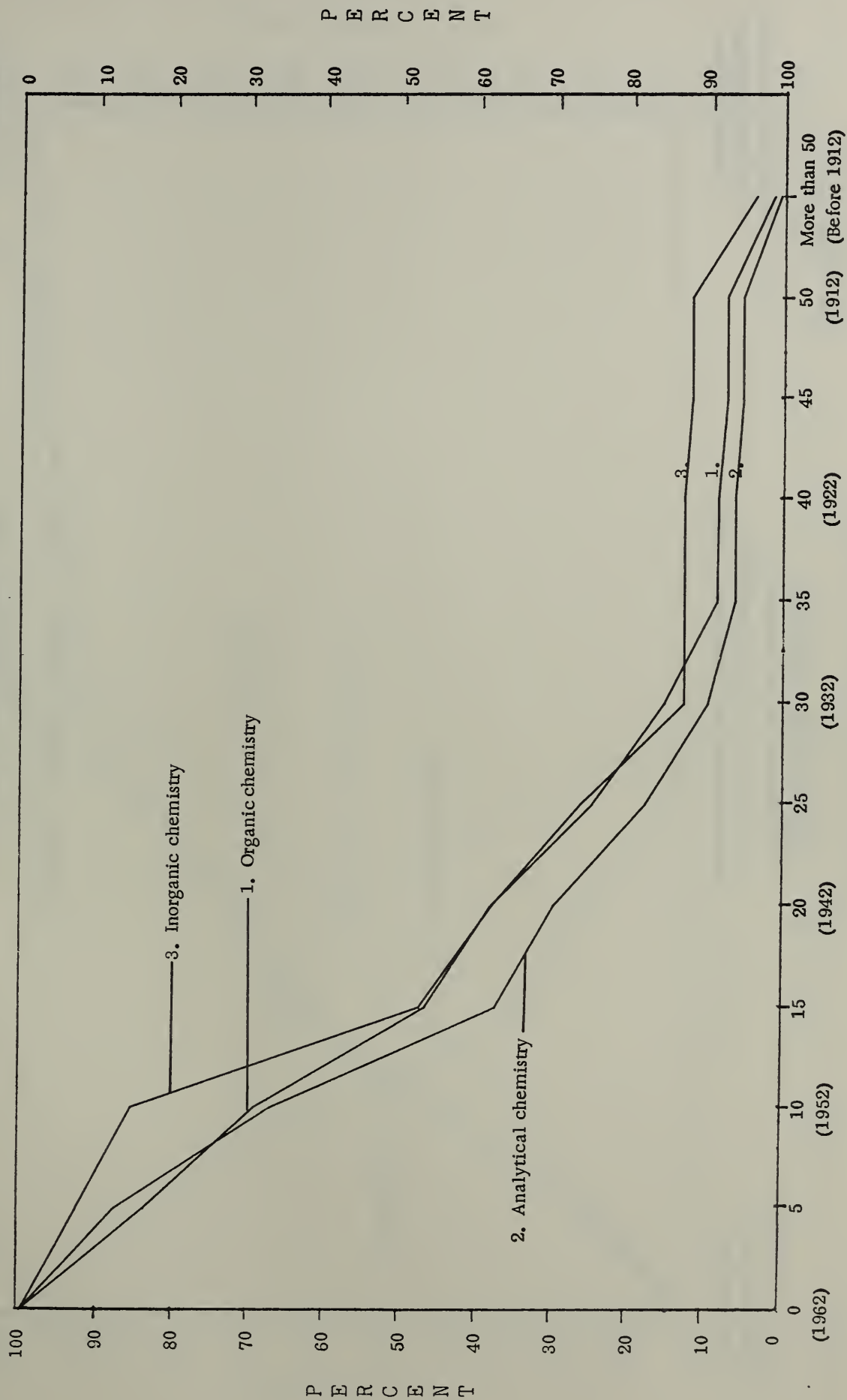
Fig. R 46

## CHEMISTRY SUB-FIELDS

USDA Research Workers Requirements  
for access to material published within  
dates measured from date of survey - 1962

Respondents whose needs  
are fulfilled as percent of  
total respondents

Respondents needing  
access as percent of  
total respondents



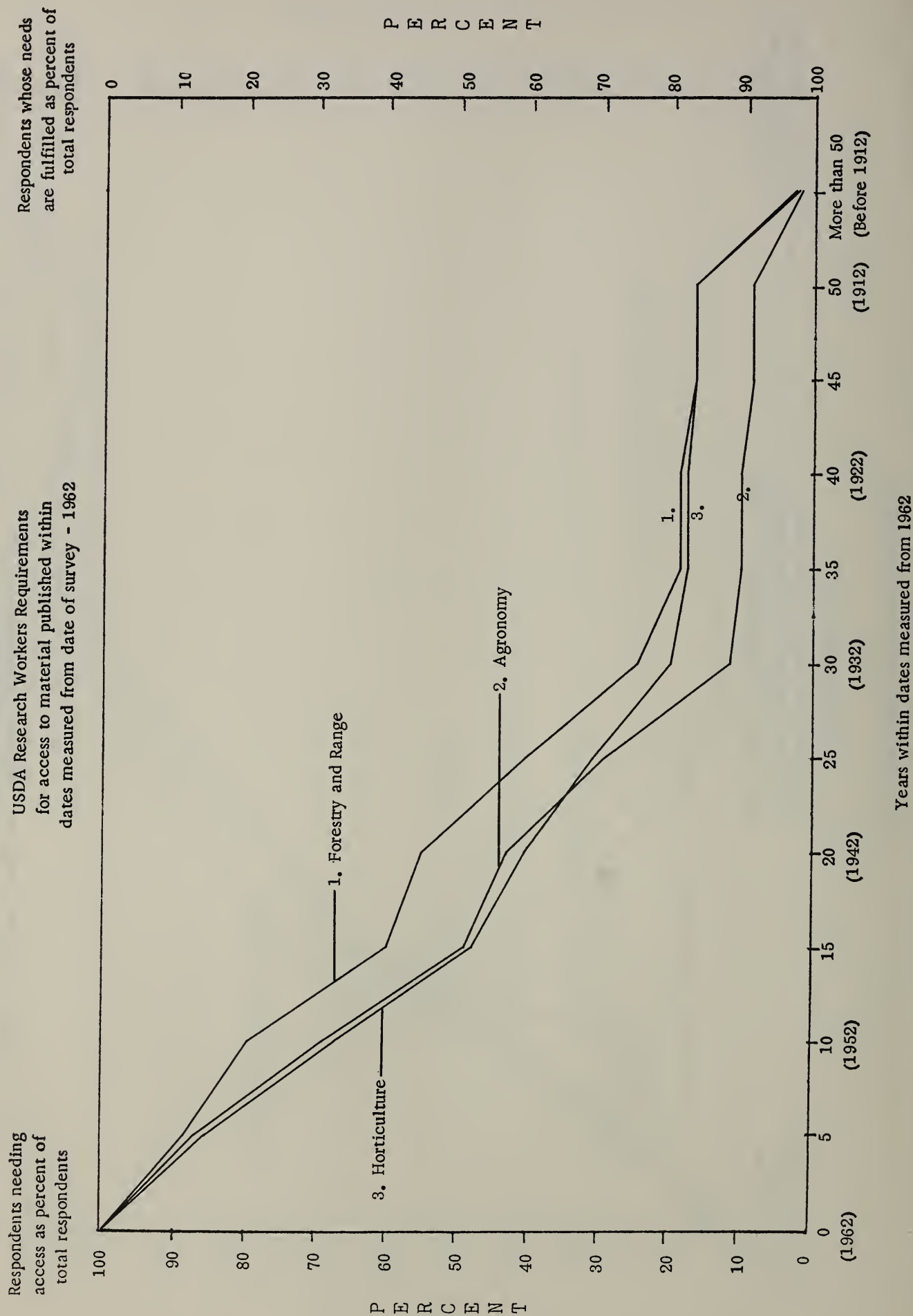
Years within dates measured from 1962

# AGE OF MATERIAL IN FIELDS OF INTEREST

## BIOLOGY PART 2 SUB-FIELDS

USDA Research Workers Requirements  
for access to material published within  
dates measured from date of survey - 1962

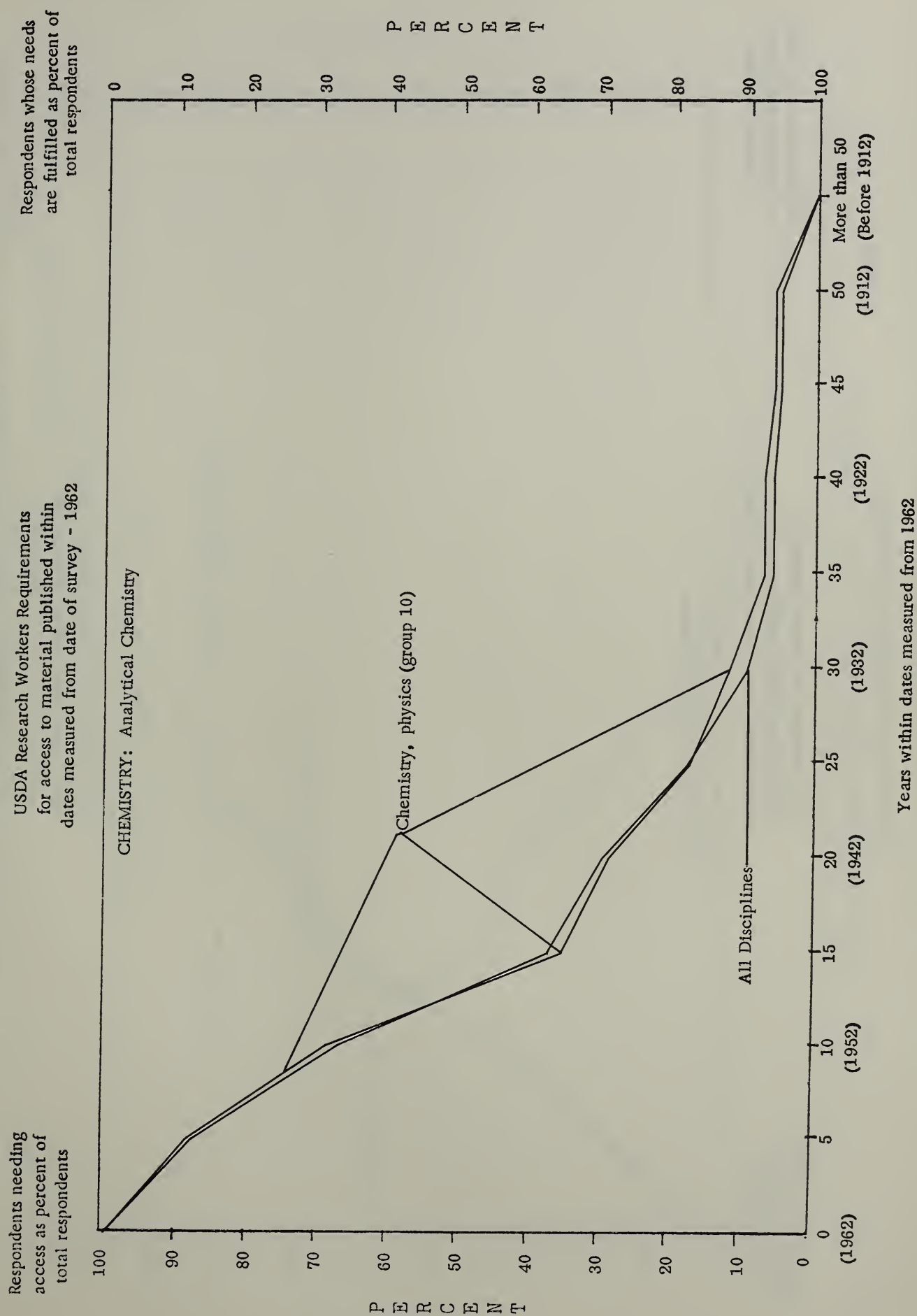
Fig. R 47





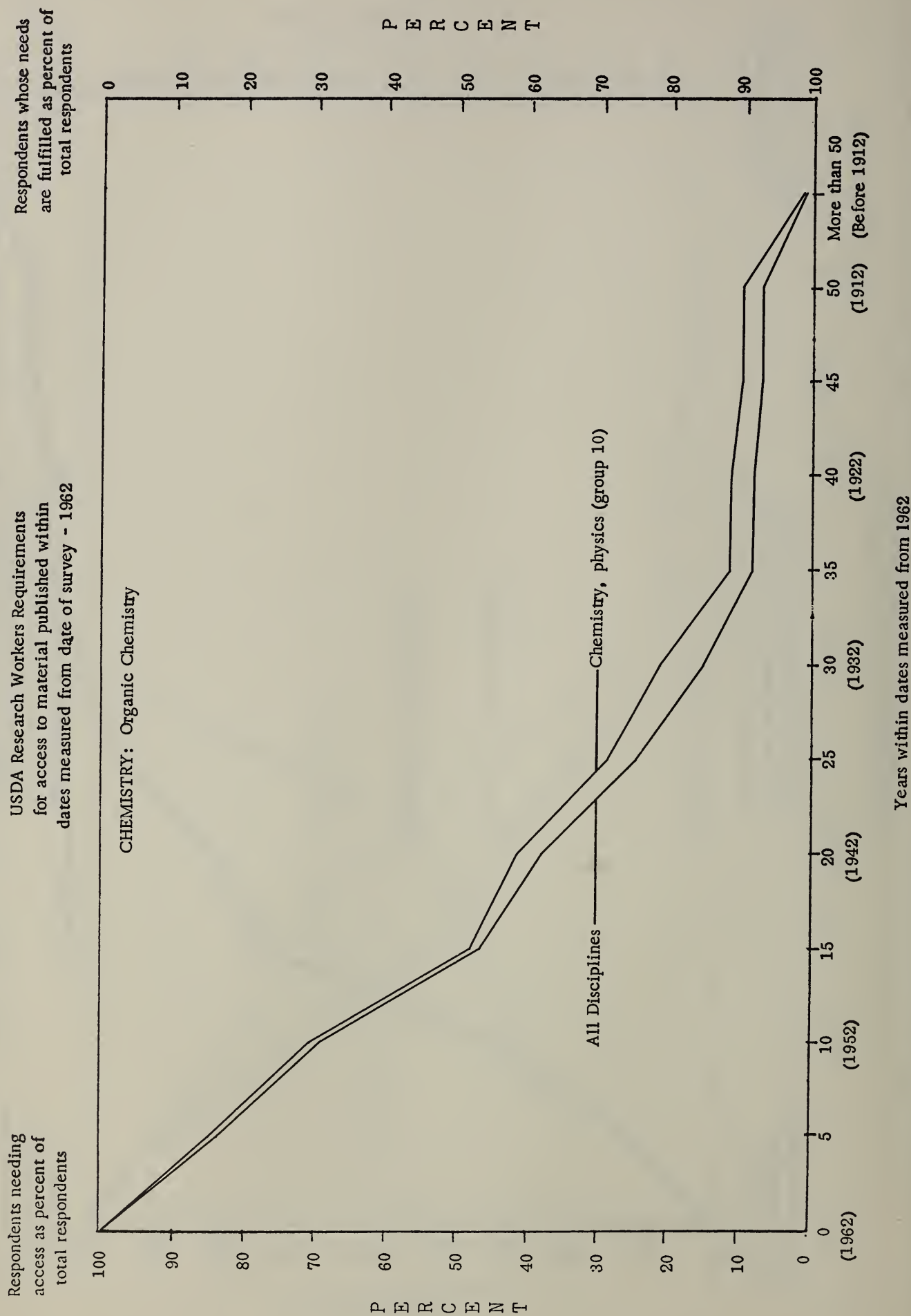
# AGE OF MATERIAL IN FIELDS OF INTEREST DISCIPLINE GROUP COMPARED WITH ALL DISCIPLINES

Fig. R 48



# AGE OF MATERIAL IN FIELDS OF INTEREST DISCIPLINE GROUP COMPARED WITH ALL DISCIPLINES

Fig. R 49





# AGE OF MATERIAL IN FIELDS OF INTEREST

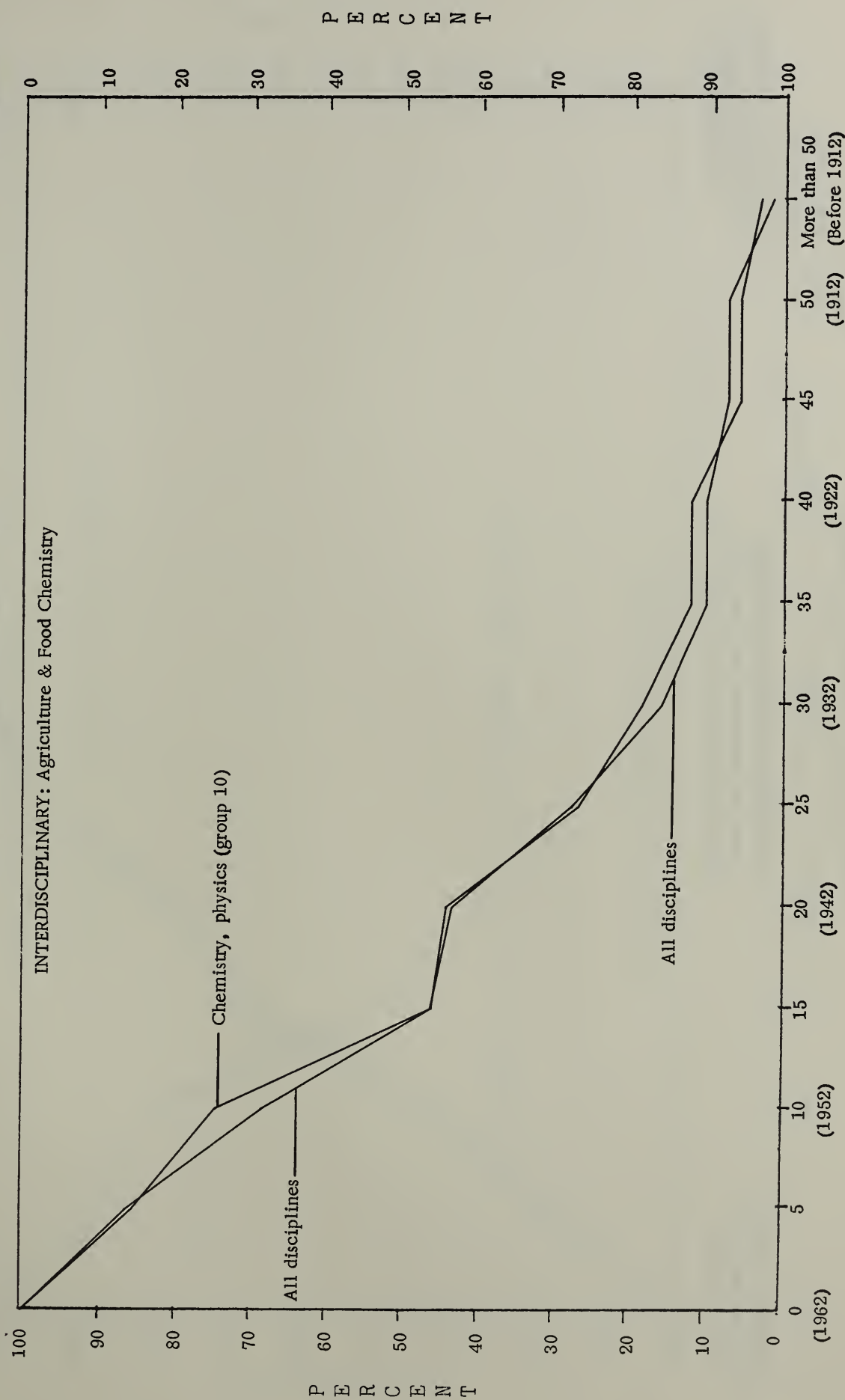
Fig. R 50

## DISCIPLINE GROUP COMPARED WITH ALL DISCIPLINES

Respondents needing access as percent of total respondents

USDA Research Workers Requirements for access to material published within dates measured from date of survey - 1962

Respondents whose needs are fulfilled as percent of total respondents



Years within dates measured from 1962

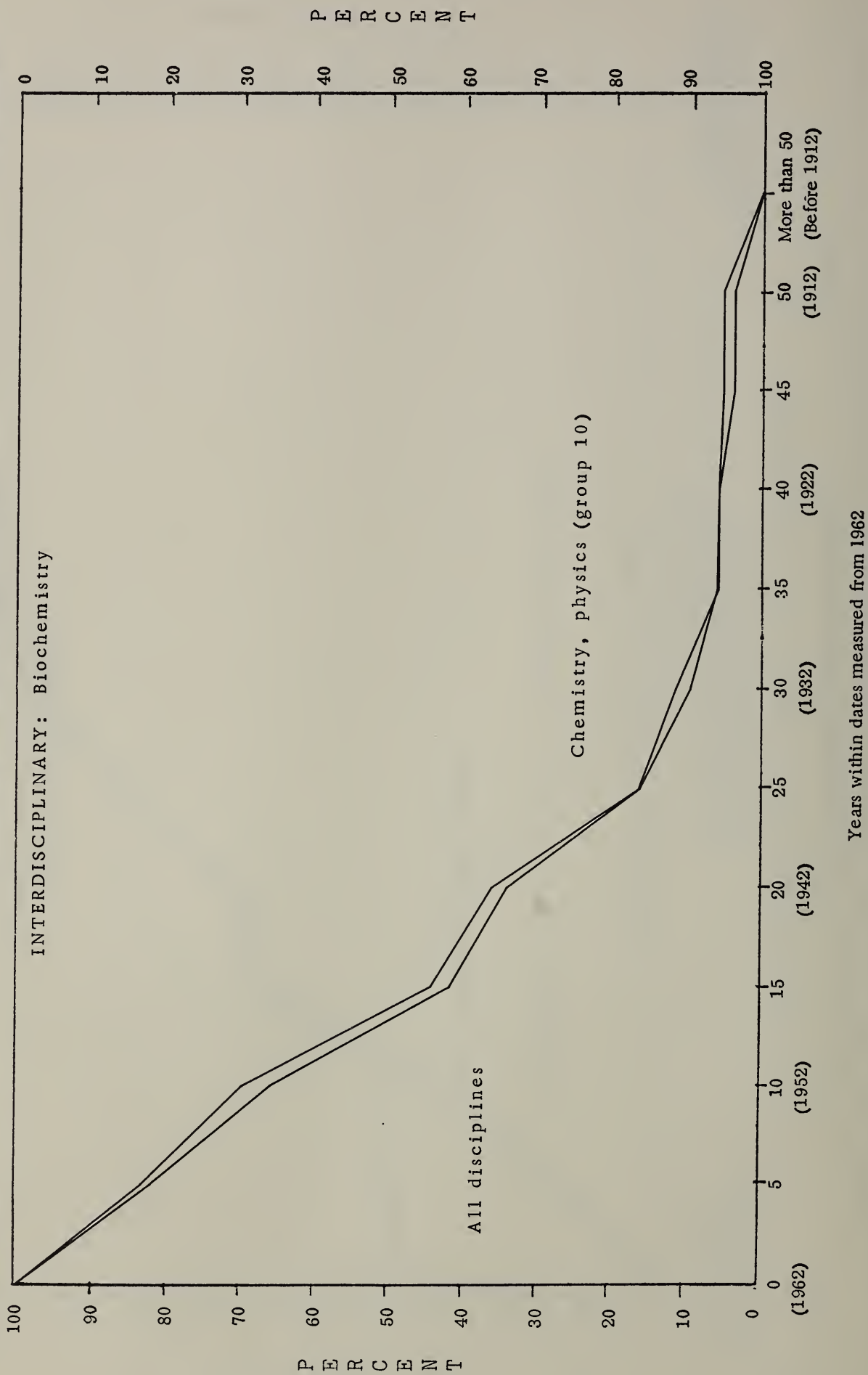
# AGE OF MATERIAL IN FIELDS OF INTEREST

Fig. R 51

## DISCIPLINE GROUP COMPARED WITH ALL DISCIPLINES

USDA Research Workers Requirements  
for access to material published within  
dates measured from date of survey - 1962

Respondents whose needs  
are fulfilled as percent of  
total respondents





# AGE OF MATERIAL IN FIELDS OF INTEREST

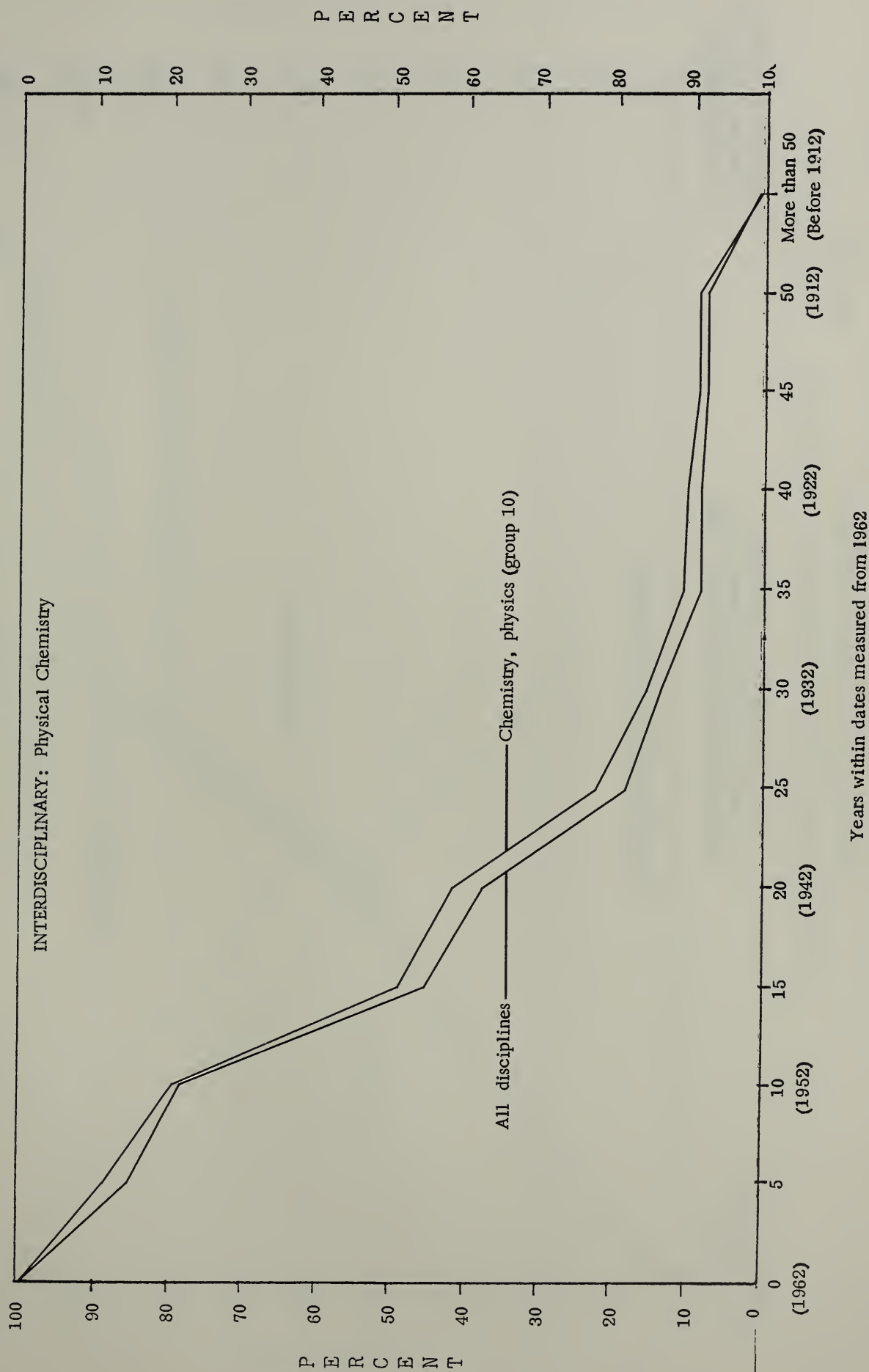
Fig R 52

## DISCIPLINE GROUP COMPARED WITH ALL DISCIPLINES

USDA Research Workers Requirements  
for access to material published within  
dates measured from date of survey - 1962

Respondents needing  
access as percent of  
total respondents

Respondents whose needs  
are fulfilled as percent of  
total respondents



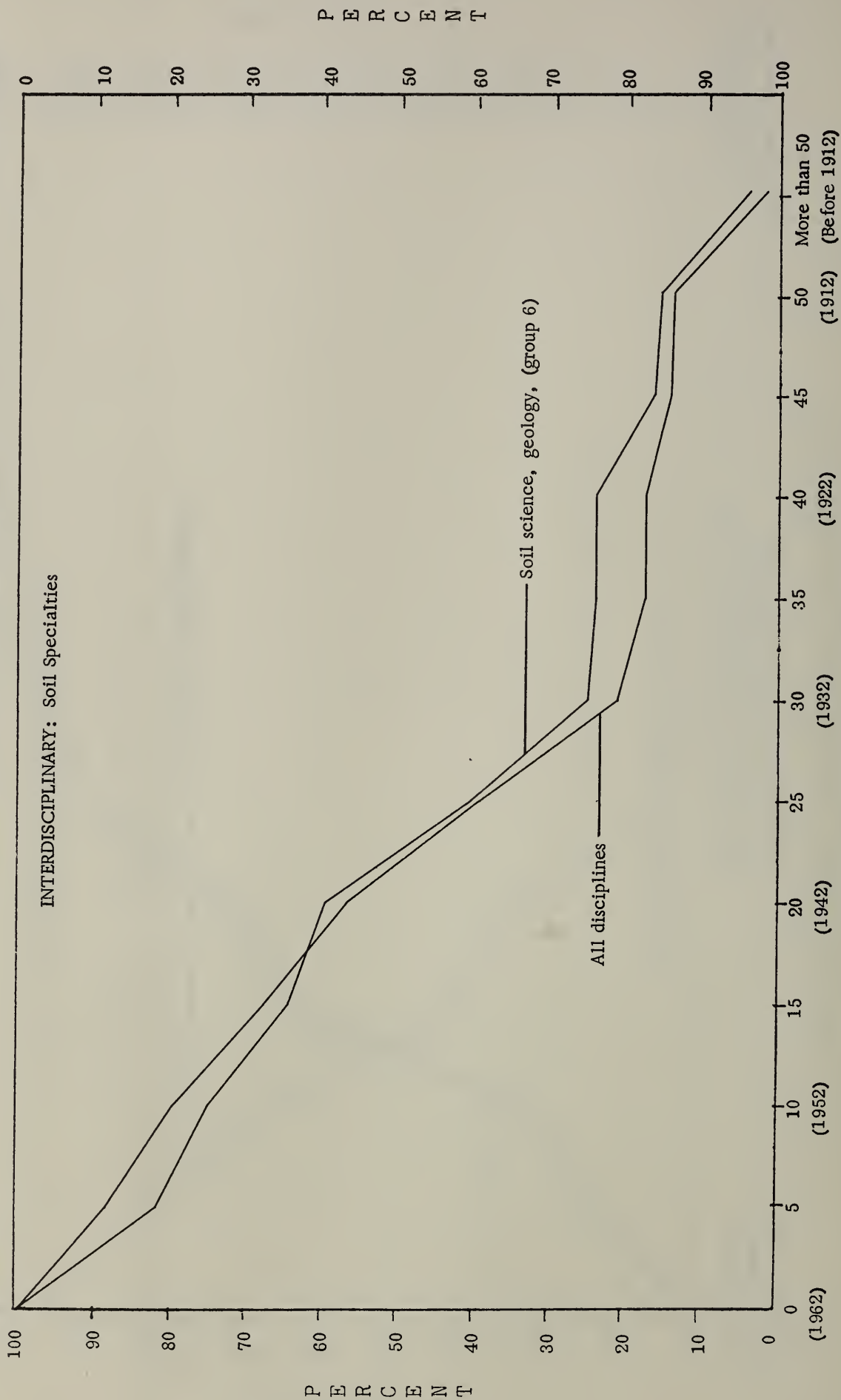
# AGE OF MATERIAL IN FIELDS OF INTEREST DISCIPLINE GROUP COMPARED WITH ALL DISCIPLINES

Fig. R 53

USDA Research Workers Requirements  
for access to material published within  
dates measured from date of survey - 1962

Respondents needing  
access as percent of  
total respondents

Respondents whose needs  
are fulfilled as percent of  
total respondents



Years within dates measured from 1962

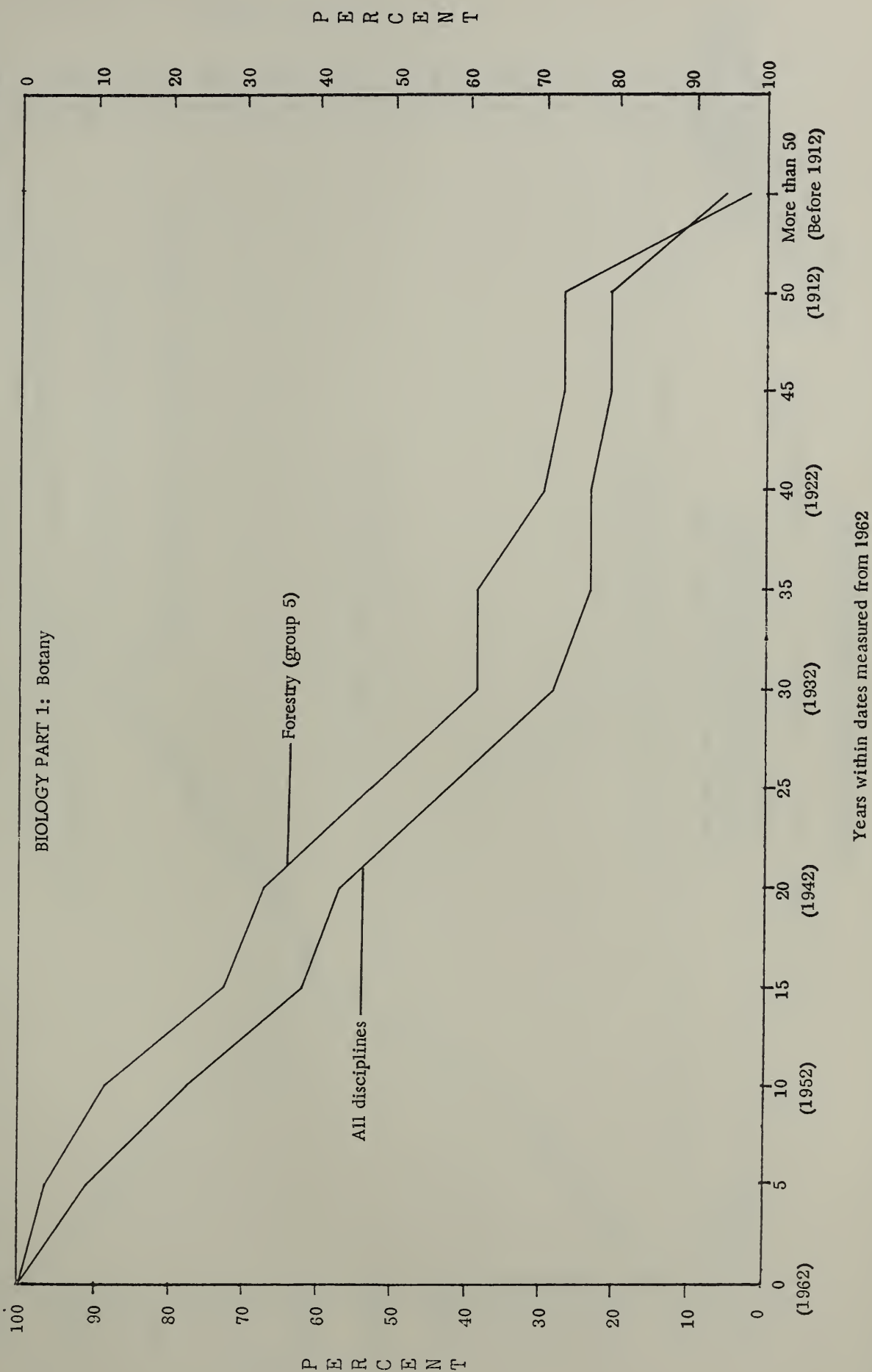
# AGE OF MATERIAL IN FIELDS OF INTEREST

Fig. R 54

## DISCIPLINE GROUP COMPARED WITH ALL DISCIPLINES

USDA Research Workers Requirements  
for access to material published within  
dates measured from date of survey - 1962

Respondents whose needs  
are fulfilled as percent of  
total respondents





# AGE OF MATERIAL IN FIELDS OF INTEREST

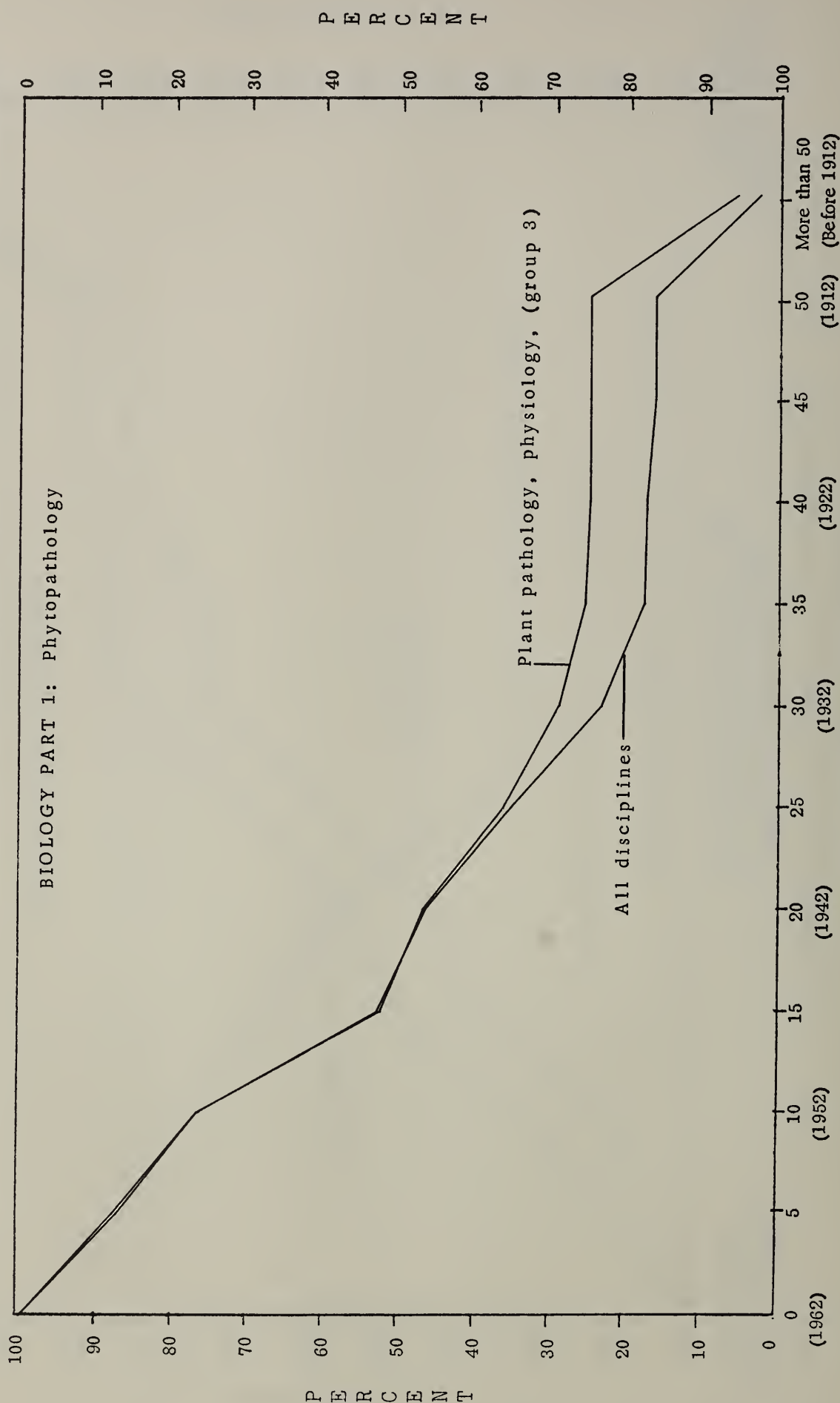
Fig. R 55

## DISCIPLINE GROUP COMPARED WITH ALL DISCIPLINES

USDA Research Workers Requirements  
for access to material published within  
dates measured from date of survey - 1962

Respondents needing  
access as percent of  
total respondents

Respondents whose needs  
are fulfilled as percent of  
total respondents



Years within dates measured from 1962

# AGE OF MATERIAL IN FIELDS OF INTEREST

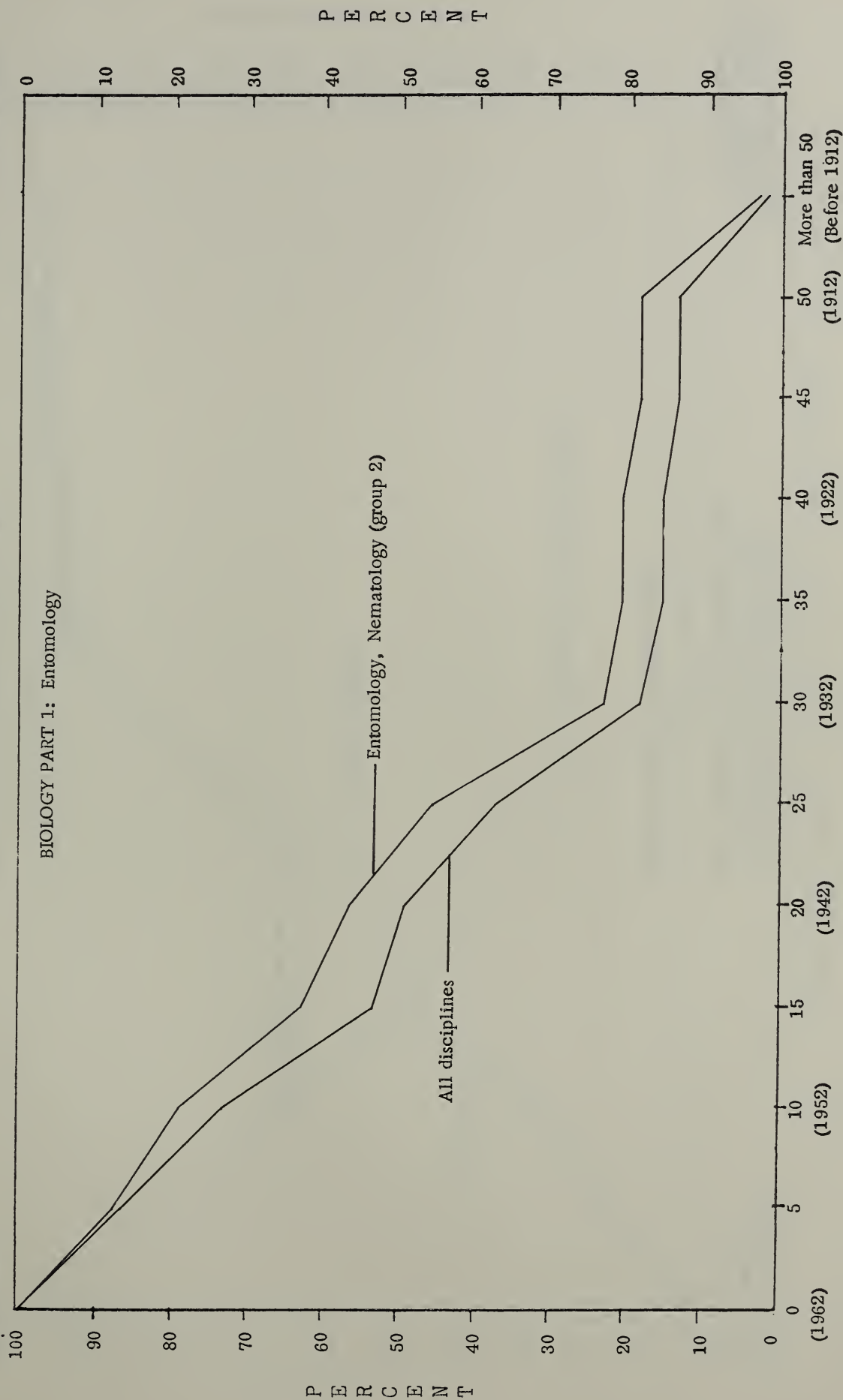
Fig. R 56

## DISCIPLINE GROUP COMPARED WITH ALL DISCIPLINES

USDA Research Workers Requirements  
for access to material published within  
dates measured from date of survey - 1962

Respondents needing  
access as percent of  
total respondents

Respondents whose needs  
are fulfilled as percent of  
total respondents



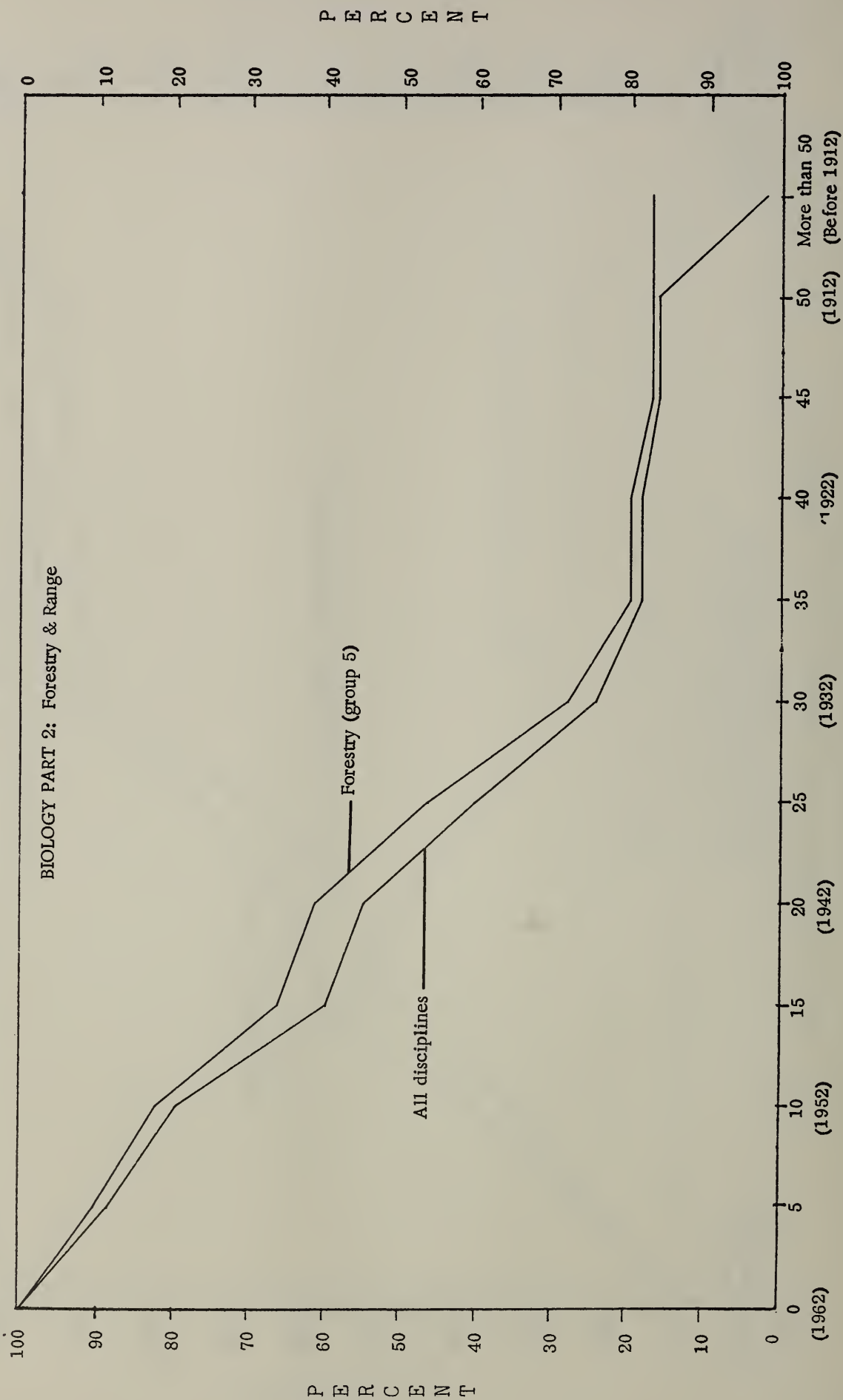
Years within dates measured from 1962

Fig. R 57

AGE OF MATERIAL IN FIELDS OF INTEREST  
DISCIPLINE GROUP COMPARED WITH ALL DISCIPLINES

USDA Research Workers Requirements  
for access to material published within  
dates measured from date of survey - 1962

Respondents needing  
access as percent of  
total respondents



Years within dates measured from 1962



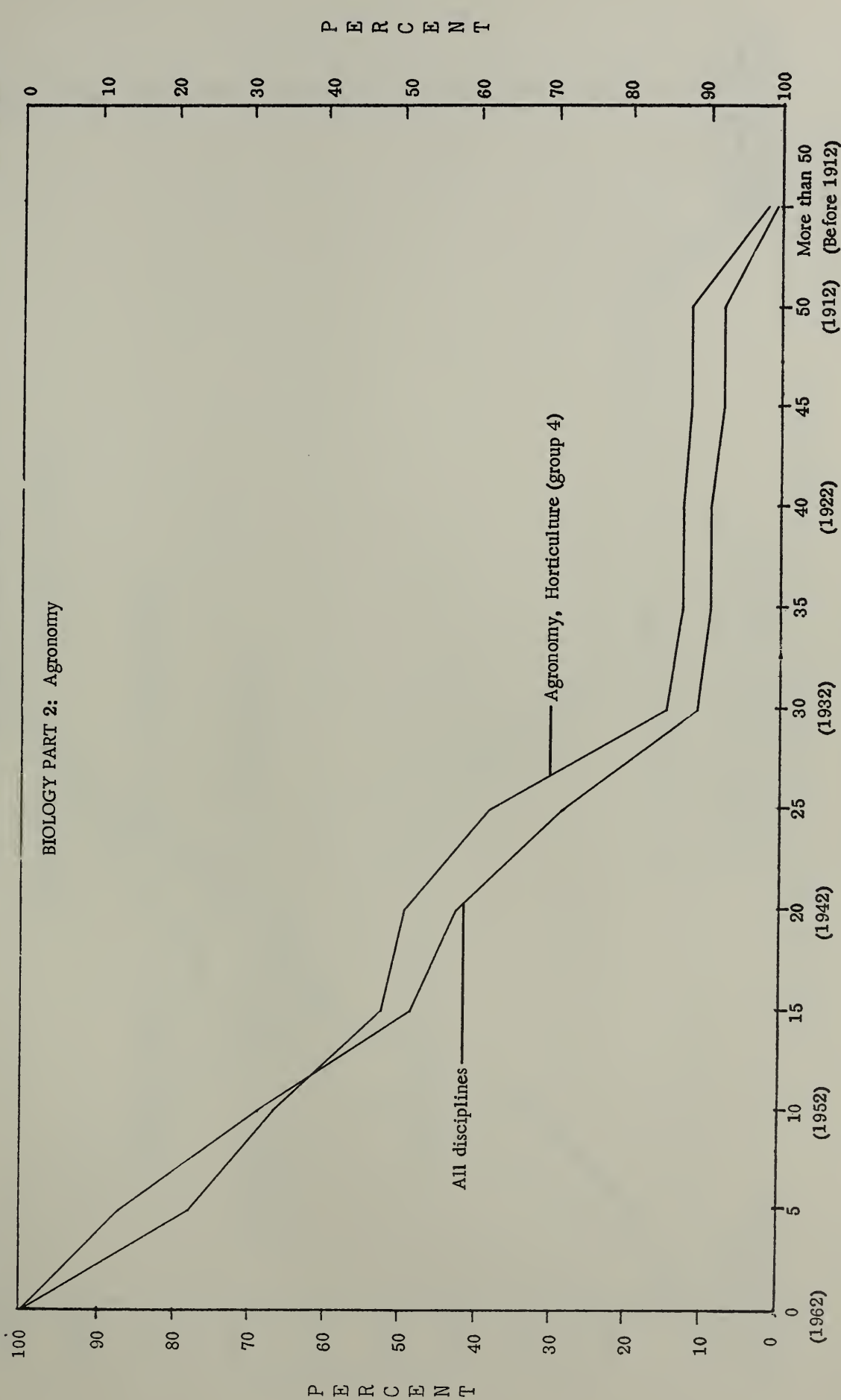
# AGE OF MATERIAL IN FIELDS OF INTEREST

Fig R 58

## DISCIPLINE GROUP COMPARED WITH ALL DISCIPLINES

USDA Research Workers Requirements  
for access to material published within  
dates measured from date of survey - 1962

Respondents needing  
access as percent of  
total respondents



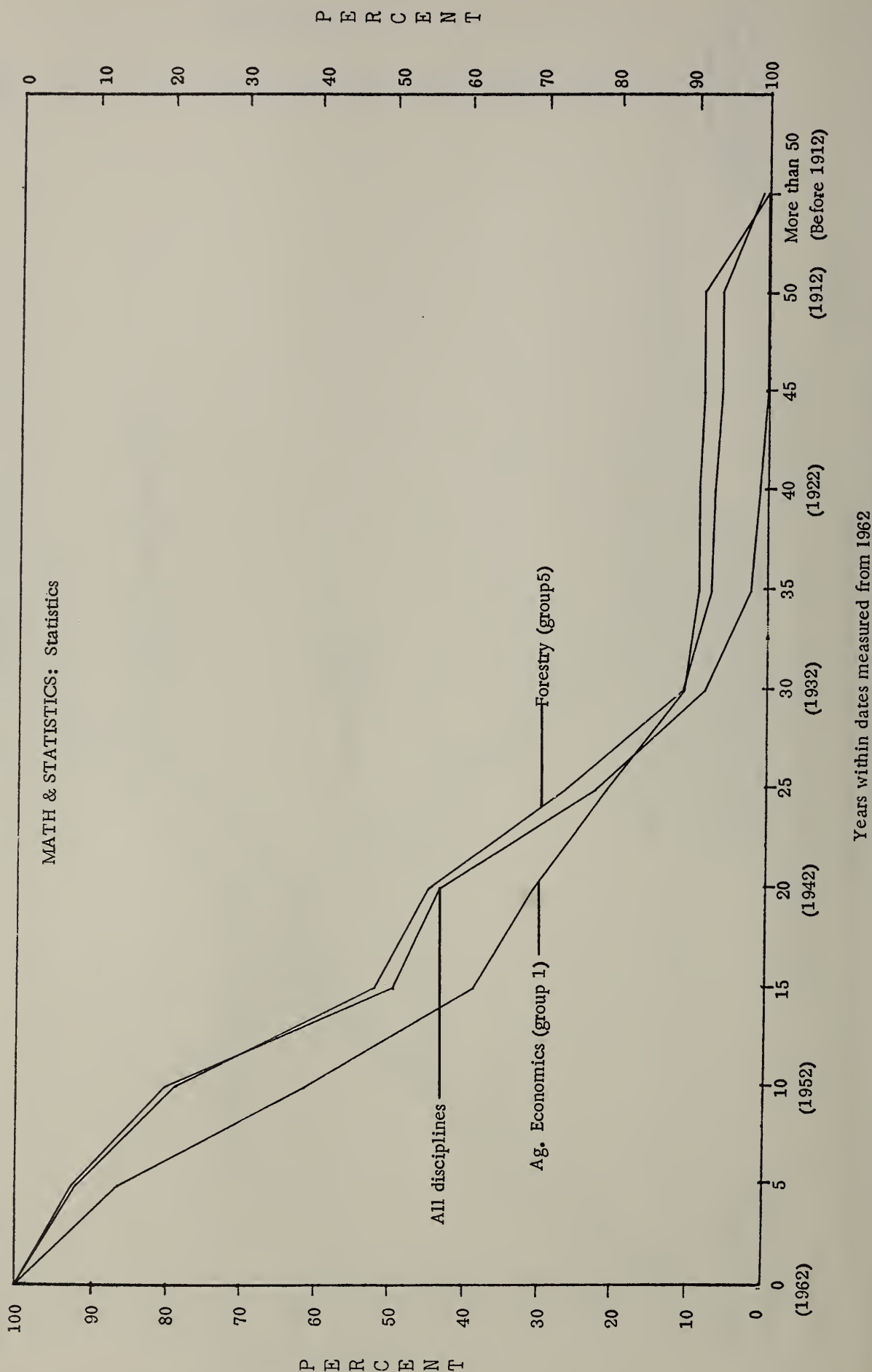
# AGE OF MATERIAL IN FIELDS OF INTEREST

Fig. R 59

## DISCIPLINE GROUP COMPARED WITH ALL DISCIPLINES

USDA Research Workers Requirements  
for access to material published within  
dates measured from date of survey - 1962

Respondents whose needs  
are fulfilled as percent of  
total respondents



# AGE OF MATERIAL IN FIELDS OF INTEREST

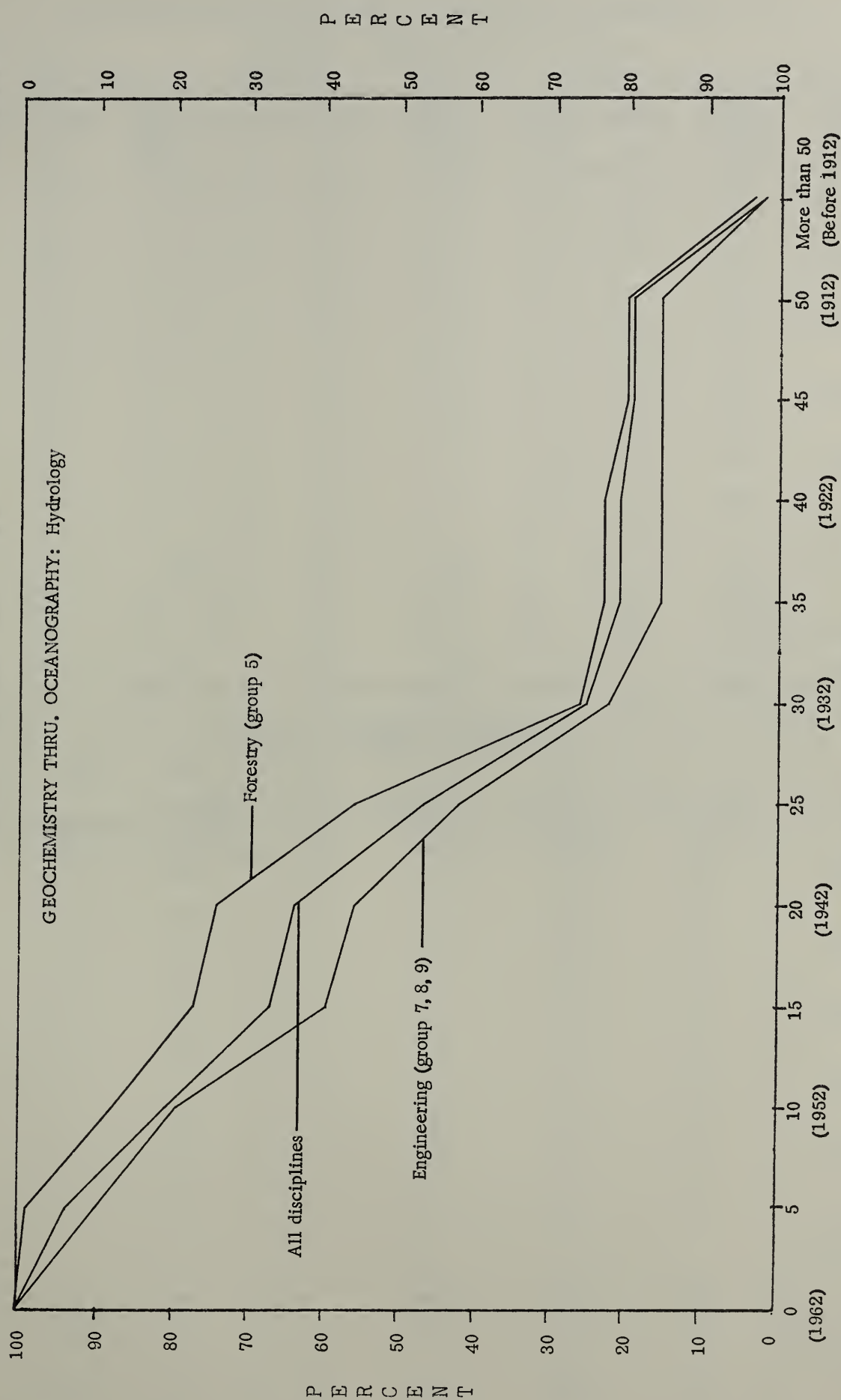
Fig. R 60

## DISCIPLINE GROUP COMPARED WITH ALL DISCIPLINES

USDA Research Workers Requirements  
for access to material published within  
dates measured from date of survey - 1962

Respondents whose needs  
are fulfilled as percent of  
total respondents

Respondents needing  
access as percent of  
total respondents





Summary of Major Fields and Specified Sub-Fields 1/ -- with Rank in parenthesis  
 Respondents Wanting Access to Material Published Within Dates  
 Percent of Total Responses

(1) BIOLOGY -- PART 1 1/

Years Measured From 1962	Total Biology Part 1 <u>1/</u> Pct.	(8) Botany Pct.	(9) Entomol- ogy Pct.	(13) Phytopath- ology Pct.	(16) Genetics Pct.	(21) Ecology Pct.	(23) Immun- ology Pct.	(24) Nutrition Pct.	(29) Bacter- iology Pct.	(48) Pharma- cology Pct.
0 (1962)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
5	88.9	90.8	86.3	87.7	87.3	94.0	84.7	91.2	90.8	76.2
10 (1952)	74.2	77.4	73.0	76.6	78.2	80.0	59.1	69.4	80.6	60.3
15	55.0	61.8	53.2	52.8	59.4	71.3	27.0	47.6	56.1	49.2
20 (1942)	50.2	56.8	49.1	46.5	55.8	69.3	21.9	44.2	49.0	39.7
25	37.8	42.4	37.2	35.3	43.7	50.0	19.0	31.3	28.6	31.7
30 (1932)	22.2	28.2	18.3	23.4	23.9	36.7	8.0	12.2	18.4	11.1
35	17.2	23.2	15.4	17.8	18.3	31.3	2.2	5.4	12.2	7.9
40 (1922)	17.1	23.2	15.4	17.5	17.8	30.7	2.2	5.4	12.2	7.9
45	15.1	20.5	13.4	16.4	16.2	28.7	1.5	2.7	11.2	6.3
50 (1912)	15.1	20.5	13.4	16.4	16.2	28.7	1.5	2.7	11.2	6.3
More than 50	2.2	5.0	1.7	2.6	1.5	2.0	-	-	2.0	-
Total	)3/ 2543	505	474	372	277	205	194	192	127	82
Respondents	)4/ 1833	380	344	269	197	150	137	147	98	63

## Averages:

Mode - Yr.	10.0	-	10.0	10.0	25.0	50.0	10.0	-	10.0	25.0
Mean - Yr.	20.8	25.3	19.4	21.0	21.2	26.9	11.6	15.8	19.2	15.2

## (2) INTERDISCIPLINARY SPECIALTIES

TABLE R 62

Years Measured From 1962	Inter-discip- linery Spec- ialties Pct.	(4) Bio- chemistry Pct.	(10) Agriculture and Food chem. Pct.	(12) Soil Special- ties Pct.	(15) Physical Chemistry Pct.	(28) Electronics Pct.	(38) Bio- Physics Pct.	(40) Photo- gramm- etry, etc Pct.
0 (1962)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
5	85.4	82.0	86.1	88.4	88.7	89.1	76.5	86.7
10 (1952)	70.4	65.9	68.2	79.6	79.4	67.4	55.3	73.3
15	48.0	41.8	46.0	67.6	49.0	43.5	34.1	38.7
20 (1942)	39.9	34.1	43.2	56.7	41.7	29.3	21.2	26.7
25	23.9	16.3	27.5	39.3	22.5	22.8	14.1	16.0
30 (1932)	13.7	9.6	15.7	21.1	15.7	9.8	11.8	4.0
35	9.5	6.0	9.9	17.5	10.8	6.5	9.4	1.3
40 (1922)	9.3	5.8	9.9	17.5	10.3	6.5	8.2	1.3
45	7.2	3.8	7.1	14.2	8.8	6.5	5.9	1.3
50 (1912)	7.2	3.8	7.1	13.8	8.8	6.5	5.9	1.3
More than 50	.6	-	1.2	1.5	.5	-	-	-
Total	)3/ 2107	598	458	373	287	132	105	99
Respondents	)4/ 1505	416	324	275	204	92	85	75

## Averages:

Mode - Yr.	10.0	10.0	10.0	25.0	10.0	10.0	10.0	10.0
Mean	16.3	13.8	16.7	21.7	17.3	14.9	12.6	12.8

## SPECIALTIES LIST -- FIELD OF INTEREST, cont.

## (3) MATHEMATICS AND STATISTICS

TABLE R 63

Years Measured From 1962	(1) Mathematics and Statistics	(14) Numerical Methods & Computation	(17) Mathematics of Resource Use	(19) Analysis & Functional Analysis	(31) Probability	(52) Algebra
	pct.	pct.	pct.	pct.	pct.	pct.
0 (1962)	100.0	100.0	100.0	100.0	100.0	100.0
5	90.1	91.7	84.3	88.1	90.3	85.4
10 (1952)	74.6	78.6	64.0	64.4	76.6	75.6
15	46.7	51.9	31.5	42.5	47.6	51.2
20 (1942)	40.0	44.8	28.4	33.8	47.6	46.3
25	25.1	26.7	16.2	20.6	28.2	31.7
30 (1932)	12.7	11.1	6.1	11.9	25.0	24.4
35	8.6	7.4	5.1	4.4	19.4	22.0
40 (1922)	8.4	7.0	5.1	4.4	19.4	22.0
45	7.8	6.1	5.1	-	18.5	22.0
50 (1912)	7.8	6.1	5.1	-	18.5	22.0
More than 50	1.1	.7	1.0	-	3.2	9.8
Total ) 3/ Respondents) 4/	2053 1377	1059 748	290 197	237 160	211 124	123 92
Averages:						
Mode - Yr.	10.0	10.0	10.0	5.0	10.0	10.0
Mean - Yr.	16.9	17.1	13.3	14.2	21.4	25.3

## (4) -- CHEMISTRY

TABLE R64

Years Measured From 1962	(2) Chemistry	(3) Organic Chemistry	(26) Analytical Chemistry	(26) Inorganic Chemistry
	pct.	pct.	pct.	pct.
0 (1962)	100.0	100.0	100.0	100.0
5	85.9	83.6	87.5	92.6
10 (1952)	69.6	69.2	67.0	85.3
15	43.0	46.6	37.4	47.4
20 (1942)	34.7	38.0	29.8	37.9
25	22.1	24.7	17.8	26.3
30 (1932)	12.7	15.2	9.5	12.6
35	7.7	8.3	5.9	12.6
40 (1922)	7.6	8.1	5.9	12.6
45	6.5	7.0	4.9	11.6
50 (1912)	6.5	7.0	4.9	11.6
More than 50	.7	.8	-	3.2
Total ) 3/ Respondents) 4/	1770 1209	972 640	639 473	159 95
Averages:				
Mode - Yr.	10.0	10.0	10.0	10.0
Mean - Yr.	15.2	15.9	13.8	18.0

## (5) BIOLOGY --Part 2

Years Measured From 1962	5/ Biology Part. 2 pct.	(2) Forestry And Range pct.	(6) Agronomy pct.	(33) Horticulture pct.
0 (1962)	100.0	100.0	100.0	100.0
5	88.3	88.4	86.9	85.4
10 (1952)	74.2	79.4	68.8	67.1
15	53.6	59.7	48.7	47.6
20 (1942)	48.4	54.7	42.7	40.2
25	34.3	40.0	28.9	30.5
30 (1932)	19.0	24.2	11.1	19.5
35	14.9	18.2	9.5	17.1
40 (1922)	14.9	18.2	9.5	17.1
45	12.5	15.9	7.8	15.9
50 (1912)	12.5	15.9	7.8	15.9
More than 50	1.4	1.7	.8	1.2
Total ) 3/ Respondents) 4/	1475 1085	537 422	527 398	119 82
Averages:				
Mode - Yr.	10.0	10.0	10.0	10.0
Mean - Yr.	19.3	21.2	16.5	20.0

## (6) GEOCHEMISTRY THRU OCEANOGRAPHY

TABLE R66

Years Measured From 1962	6/ Geochemistry thru Oceanography pct.	(7) Hydrogology pct.	(22) Geology pct.
0 (1962)	100.0	100.0	100.0
5	93.9	93.3	98.0
10 (1952)	82.3	80.1	94.1
15	64.3	66.4	71.7
20 (1942)	62.0	63.2	71.1
25	49.3	46.3	64.5
30 (1932)	27.0	24.9	38.8
35	23.2	20.6	34.2
40 (1922)	23.2	20.6	34.2
45	21.9	18.9	33.6
50 (1912)	21.9	18.9	33.6
More than 50	2.7	1.5	3.9
Total ) 3/ Respondents) 4/	920 708	506 402	199 152
Averages:			
Mode - Yr.	25.0	25.0	50.0
Mean - Yr.	24.9	23.2	29.7



## (7) ENGINEERING

Years Measured From 1962	(18) Engineering	(25) Chemical Engineering	(34) Sanitary Engineering	(36) Mechanical Engineering	(42) Civil Engineering
	pct.	pct.	pct.	pct.	pct.
0 (1962)	100.0	100.0	100.0	100.0	100.0
5	91.1	87.8	96.0	94.4	89.7
10 (1952)	80.3	74.8	89.1	83.3	85.9
15	52.0	47.6	48.5	41.1	68.0
20 (1942)	45.6	42.2	37.6	37.8	60.3
25	27.8	29.3	22.8	18.9	41.0
30 (1932)	16.1	14.3	10.9	6.7	32.1
35	11.5	9.5	9.9	4.4	21.8
40 (1922)	11.3	9.5	8.9	4.4	21.8
45	10.8	9.5	8.9	4.4	19.2
50 (1912)	10.8	9.5	8.9	4.4	19.2
More than 50	.3	.7	-	-	-
Total ) 3/ Respondents) 4/	1001 684	217 147	179 101	90 118	112 78
Averages:					
Mode - Yr.	10.0	10.0	10.0	20.0	-
Mean - Yr.	18.1	17.0	17.1	15.1	23.2

## (8) -- PHYSICS

TABLE R68

Years Measured From 1962	(27) Optics	(46) Thermal Phenomena	(49) Solid State	(50) Physics of Fluids	(51) Mechanics
	Pct.	Pct.	Pct.	Pct.	Pct.
0 (1962)	100.0	100.0	100.0	100.0	100.0
5	94.2	90.2	97.8	94.4	95.7
10 (1952)	83.2	75.5	91.3	88.9	89.4
15	53.3	48.0	65.2	72.2	63.8
20 (1942)	47.7	41.2	52.2	72.2	59.6
25	29.0	26.5	28.3	50.0	40.4
30 (1932)	15.4	14.7	13.0	24.1	23.4
35	10.0	11.8	6.5	13.0	14.9
40 (1922)	10.0	11.8	6.5	13.0	14.9
45	7.9	8.8	2.2	13.0	10.6
50 (1912)	7.9	8.8	2.2	13.0	10.6
More than 50	-	-	-	-	-
Total ) 3/ Respondents) 4/	604 428	143 102	74 46	72 54	69 47
Averages:					
Mode - Yr.	10.0	10.0	10.0	25.0	10.0
Mean - Yr.	18.1	17.1	15.4	22.7	21.2

## (9) -- ATMOSPHERIC

Years Measured From 1962	7/ Atmospheric, etc. Pct.	(20) Climatology Pct.	(39) Area Specialization Pct.	(41) Atmospheric Dynamics Pct.
0 (1962)	100.0	100.0	100.0	100.0
5	93.2	94.8	94.0	94.7
10 (1952)	76.5	81.3	75.9	78.9
15	49.8	53.5	45.8	52.6
20 (1942)	44.7	49.7	39.8	50.0
25	29.9	34.2	28.9	31.6
30 (1932)	15.5	17.4	14.5	17.1
35	12.1	12.9	14.5	10.5
40 (1922)	12.1	12.9	14.5	10.5
45	10.9	12.3	14.5	7.9
50 (1912)	10.9	12.3	14.5	7.9
More than 50	1.0	1.3	-	-
Total ) 3/ Respondents) 4/	540 412	207 155	105 83	99 76
Averages:				
Mode - Yr.	10.0	10.0	10.0	10.0
Mean - Yr.	18.3	19.7	18.0	18.4

## (10) SOCIAL SCIENCE,

## (11) PSYCHOLOGY

TABLE R70

Years Measured From 1962	Social Science, Humanities and other Specialties 8/ Pct.	(10) Economics 8/ Pct.	Psychology Pct.	(35) Industrial and Personnel Psychology Pct.
0 (1962)	100.0	100.0	100.0	100.0
5	86.0	90.1	70.9	73.1
10 (1952)	64.6	73.2	40.5	39.7
15	44.6	52.1	13.9	16.7
20 (1942)	38.0	42.3	11.4	12.8
25	29.2	31.0	5.1	5.1
30 (1932)	21.0	23.9	3.2	1.3
35	17.7	19.7	1.9	-
40 (1922)	17.3	18.3	1.9	-
45	17.0	18.3	1.9	-
50 (1912)	17.0	18.3	1.9	-
More than 50	4.8	4.2	-	-
Total ) 3/ Respondents) 4/	423 271	103 71	214 158	115 78
Averages:				
Mode - Yr.	5.0	10.0	5.0	5.0
Mean - Yr.	20.9	21.1	8.1	7.8

- 1/ Sub-fields shown for groups with 50 or more responses and ranked from 1-52 based on total number of responses including responses for which years were not shown.
- 2/ Includes sub-fields Anatomy, Bacteriology, Botany, Ecology, Entomology, Genetics, Immunology, Nutrition, Pathology, Pharmacology, Physiology, Pythopathology.
- 3/ Total number of responses, including responses for which years were not reported. This number was used as a basis for determining rank.
- 4/ Number of responses for which age of material in years was shown.
- 5/ Virology, Zoology, Agronomy, Animal Husbandry, Fish and Wildlife, Forestry and Range, Horticulture.
- 6/ Geochemistry, Geodesy, Geology, Paleontology, and Paleobotany, Solid Earth Geophysics, Geography, Hydrology, Oceanography.
- 7/ Atmospheric Dynamics, Chemistry and Physics, Climatology, Synoptic Meteorology, Area Specializations, Meteorological Instrumentation.
- 8/ There was no sub-field (intermediate) for this group. Economics ranked 13 among the specialties (minor)group, and is shown above in place of the sub-field.



SUMMARY OF COMMENTS FROM INQUIRY ON REQUIREMENTS OF USDA RESEARCH WORKERS FOR ACCESS TO SCIENTIFIC  
AND TECHNICAL PUBLICATIONS

September 1962

The following is a tabulation of comments classified on the basis of the judgment of the staff.

1. Present Services

	<u>Access to Service</u> Field	<u>Service by NAL</u> D. C. & Belts.	TOTAL
Comments:			
(1) Commending	19	12	31
(2) Adverse criticism	38	24	62
(3) Problems cited	10	9	19
(4) General comments	<u>11</u>	<u>4</u>	<u>15</u>
	78	49	127

2. New Services Suggested

(1) A description of NAL Services	24
(2) Abstracting Service	11
(3) Special bibliographies, lists of recent acquisitions, copies of table of contents	<u>15</u>
	50

3. Reinstate Routing Periodicals:

	<u>Field</u>	<u>D. C. &amp; Belts.</u>	
Yes	17	14	31
No	-	1	<u>1</u>
			32

4. Photography or Reprints Service

18

5. Translation Services and Foreign Journal Collection:

(1) Commending service	2	
(2) Problems cited	<u>13</u>	
		15

6. Comments on other than NAL indexes or abstracts

15

7. NAL collection needs

10

8. Improve techniques or procedures

10

9. Criticism of individual researcher or his agency's policy

9

10. Personal contacts as a source of information

8

11. NAL Inter-Library loan service

4

12. General comments

35  
328

The above summarizes comments made at the end of the questionnaire in response to:

"Your comments are invited on any phase of the problems in current awareness, retrospective searching, obtaining books, periodicals, etc., as related to library services."

A listing of the comments grouped as in the summary follows.

## 1. PRESENT SERVICES

### Field - Access to Service:

225 I have had no trouble in getting any published material. If the library here does not have it, they will get it or get a microfilm copy of any article.

819 I have never yet failed to get from the library any domestic or foreign periodical or book, old or recent! The Bibliography of Agriculture gives a good worldwide coverage!

372 The library facilities and attitude toward their use has assisted our research many times. The librarian and the local library committee are to be commended for doing an excellent job.

834 We have a favorable situation for library research because we are a research unit of the Forest Service. Our usual procedure by the various steps is: (1) personal files; (2) Field library; (3) station headquarters library; (4) University Library; and (5) USDA library.

409 The greatest problem in current awareness is to find time to use library facilities adequately and handle all the details of the job. Excellent library facilities are available in my own building.

374 The library at Western Regional Res. Lab. is especially good since we have a loan arrangement with the U. of California. This USDA library has very little in the field of allergy and medicine in particular.

912 Our library at Forest Products Lab. has been most helpful and has access to references at the University of Wisconsin Library, which in some instances has expedited my work. I appreciate their services and commend them.

874 I wish to stress the importance of local library facilities and services - in my work at least. Our local library has proved extremely valuable in providing ready access to a variety of statistical and mathematical texts, and in locating hard-to-find references.

215 I have access to the library at Iowa State University. I feel it would be difficult to carry out my research and prepare manuscripts without such a library.

171 Our library service here is excellent and we get any new books we need, or any old ones. Beg-Borrow-or Steal! Our periodicals are ample, too.

168 Our library facilities here at SRRL - of SURDD are very good and comprehensive. Also working and lending arrangements exist with several other technical reference libraries in the immediate locality.

158 In order to intelligently do research work of any type, a sufficient source of the literature is necessary. I am pleased to report that we have here at SURDD, a library which greatly surpasses that requirement.

157 I have found our library service to be of excellent quality. Our librarian is very capable in obtaining any information from other sources when its not available locally.

123 At this location (Davis, Calif.) we have excellent library facilities and easy access to them. Including use of Berkeley, Calif. campus library.

052 We have fine library facilities at Peoria. We can also use volumes from Bradley University and other universities in neighboring states.

604 I am very fortunate here at Oklahoma State University for the college has an excellent library. This has been very important.

539 We subscribe to the periodic literature most needed by us, and we are fortunate to be able to use the University of Wisconsin Library system. We therefore seldom use the USDA National Agricultural Library.

281 Our library does an excellent job of making everything available that may help the scientific staff in any way. It is difficult to see how more could be done to improve the situation at least in my fields of interest.



505 Our Tobacco Literature Services on this campus is invaluable.

408 Funds of USDA libraries are limited to such an extent that their service to USDA field stations is only a token gesture. I feel that this is indeed an unnecessary handicap. All field station investigators should have ready access to scientific and technical publications.

558 The library services available at this laboratory in connection with those available on the Iowa State University campus seem to be fairly adequate for our needs. My only major complaint and that from members of my staff, are concerned with the delays in getting key references or photocopies thereof for those references not available here or on the Iowa State University campus.

213 We have practically no library services in the field station.

524 Keeping up with library facilities and operations is a bit of a problem when one works 300 miles from an adequate library - as Texas A & M. The photoprint service of USDA library is the most helpful to us.

480 Agricultural Research Service personnel stationed at field stations not located at a University have very little opportunity to read current literature except those periodicals they personally purchase. No routing of current periodicals is done in USDA.

490 Library services are not easily available to such field stations as ours (Florence, S.C.). Improvements in this area would seem to be desirable.

511 Since I am located at a field station, I have not had access to library services and do not have available library acquisition lists.

516 Very poor library facilities in field stations, except USDA Library photostat service.

613 The college library (Montana State College) is not very good for economic research -- just does not have good research data.

610 Library service could be much improved here.

857 Although improving, we have not had an agency library that was worthy of the name.

355 In the field we need better service in obtaining books, periodicals, etc., from the library. Current periodicals and journals should be routed to us. We have no such service now.

391 Many of the sources listed are not available to me at my present station. This makes preparation of manuscripts long and tedious.

909 Don't have time to do any browsing in the library unless it is for a specific purpose. There is not an opportunity to attend many meetings relating to my research and there is no library source to obtaining information on the paper presented.

803 My chief problem is not having a good library readily available to browse through references of immediate interest. i.e. I must send off for periodicals I need or think I need. The process is time consuming and often need has passed by the time I receive material - or I must return material to library before I get to it again.

828 Library facilities are extremely limited at our institution, and this deficiency is reflected in my answers to this questionnaire. Ideally, other sources of information would be used to greater advantage if available. However, because of the lack of immediate facilities, we rely heavily on the USDA Library loan service and we are indeed appreciative of the services rendered.

564 The nearest adequate library facilities to this field are located at the University of Florida at Gainesville, 120 miles away. Therefore, to perform an adequate literature review and to keep abreast of current literature is extremely difficult.

025 Field research stations are seriously handicapped by lack of ready access to library reference and loan services, and would profit from periodical circulation service.

014 The location of ARS field stations in places where the best library materials are not available is a great hindrance.



208 Overseas workers find the local libraries usually do not have sufficient literature pertaining to work done in the U.S. Many of the above sources are not available to overseas personnel at the present time.

135 These comments emphasize the lack of a large library in a field station several hours drive from a university library. Many potentially useful sources of information were simply not accessible.

117 At a small field station, library facilities are limited. Travel to near-by land-grant college libraries that offer reference services would seem partially adequate. Circulation of tables of contents of journals and periodicals in ones field and related fields would permit request of those issues containing items of interest.

345 Have very limited library services available in official station - must make special trip to Tucson, Ariz. For detailed library work routing and distribution of current literature good, but sometimes six or more months behind.

355 The greatest handicap to the position is the lack of library facilities. The closest reference library is 250 miles. You can see the difficulty when you need a special reference or one that is a few years old.

402 Library facilities at the U.S. Range Livestock Exp. Station are woefully poor. Card indexes are not available on authors or subject matter, consequently it is necessary to travel 300 miles to nearest college library.

736 Over the years the USDA library services seem to have become progressively poorer to the extent that primary reliance must be placed on nearby university libraries. Fifteen years ago USDA (including agency) library facilities and services were excellent and I made considerable use of them. Now I use the University facilities largely and am not sure what USDA services are available, perhaps due to lack of communications.

763 Libraries, as a source of immediate information pertinent to project and research studies, are too distant for efficient use - over 250 miles.

876 The greatest problem at present is the lack of adequate library in the immediate vicinity of this field station -- Laconia, N.H. Although verifaxing and photostating by the Washington Office and our own relieve this somewhat, the fact remains that field stations are handicapped without library facilities.

570 We are in need of better library facilities and services so that we can keep abreast of the literature in our field.

557 From this station, library reference services, photocopying, translations, are too involved and too slow to be of real value.

557 Delays normally encountered when requesting inter-library loans, photocopies and translations through our local station library seem to be excessive. Resources for literature searches are presently limited at our station.

009 Field stations such as ours do not have access to library facilities without extensive travel. Routing services would be very helpful.

220 The routing and distribution of current literature is most unsatisfactory. Magazines arrive 6-8 months late. Sometime longer. My agency has very few reference services in my subject matter field. Only a few of the current ones are available. Lack of library near agency is poor management for research workers.

321 Unfortunately, many research workers are located in stations at which library facilities are meager or non-existent and the services of a good library often involves excessive travel and time. These workers are at a terrible disadvantage in attempting to keep abreast of recent work in the field.

313 The library station consists almost entirely of journals, periodicals and reference books owned by members of the staff. The actual library is non-existent. Attempts to obtain reference material from other sources have not been too successful and I have found it better to take time to visit either of the State Universities.

911 The current tendency is to dispose of much useful information merely because it is old. In general the system seems to be more important than the subject matter--at least for an occasional user.

211 Branch library service at land-grant colleges and for universities was very convenient for field workers when it existed. Please reinstate.

264 We do not have library facilities available.

890 It sometimes takes up to 3 months to receive a copy of an article from the USDA library. Usually, it is more convenient to drive to a nearby University and use their facilities.

895 1. Time lag getting articles to field station from library. 2. Means of keeping copy of article for file. I would suggest sending copies of articles instead of large bound volumes as often as possible.

095 The preparation of articles requiring exhaustive literature survey is very difficult away from a library. Prompt library service, in response to mail requests for books and journals, is of considerable assistance. Even so, a problem still exists.

226 Service in obtaining books is good. Provided such books asked for are not out and remain out for long periods.

040 On the whole, I find our library facilities and services to be excellent. One minor criticism I would have stems in part from a rather frequent turnover of library personnel and in part from the continued accumulation of official government publications (census reports, Federal Regulations, Congressional Directory, etc.). The result, from the standpoint of the researcher, is a frequent reorganization of the library stacks with result of confusion in the finding of books and journals. Also the government publications referred to are almost never used by the research scientists. Their space in the library could better be taken by useful scientific journals and other scientific publications.

363 Books which contain old or out-dated literature are sometimes hard to obtain. They have to come from a university, but access to other references are usually very good.

097 Reference material seems to be adequate in most respects, although there is frequently an excess of delay in receiving through mails. A station library would be desirable.

567 In a small field station, such as where I am located (4 professional staff), the problem is in not having library facilities at all, except for journals, etc., individuals subscriptions to them. To use library facilities requires a trip. Circulated abstracting journals are most helpful; permanent retention of such journals would help. If "cheap" requests could be obtained at libraries so copies of especially pertinent articles could be acquired easily, library time could be cut down.

144 Service has improved in last two years for obtaining literature. There seems to be a need for a more centralized area service.

285 I can find little to criticize in current USDA Library service based on my experience at our branch library in Wyndmoor. However, the USDA Library classification system is a disgrace to a research institution and a serious handicap to the retrieval of information. For example, relative to questions 3, 4, and 5 of this questionnaire, I have, in the past, found it useful to quickly skim through texts in fields closely related to my primary interest. This is possible in libraries using the Dewey Decimal or Library of Congress systems, but not in our library where closely related books may be scattered over 20 shelves. For example, "386" covers many of the fields in which I am interested: books on organic, inorganic, physical, colloidal, etc., chemistry are mixed together indiscriminately depending entirely on alphabetical filing by authors' names. The system is irrational in the extreme. For example, texts on statistics are filed under 251 and those on mathematics under 325, which includes titles dealing with statistics. In between books on fat chemistry are found at 307.8 while closely related texts on fat are found under 387.1. Strangely enough, books on petroleum are filed under 401 between those on pharmacology at 396 and those on fresh water biology at 409. As a result, without a detailed card catalog search, one can never determine what books a USDA Library contains in related fields.

004 In research there is no substitute for a good library at hand. There is a need for a system for getting reference material in the hands of people in isolated field stations.

523 In my present location (3 years), I have had access to a large college library. Prior to this time and in the field, aside from an occasional delay in securing reproductions of specific articles, I have had excellent service from the Library in Washington and the Oklahoma State University Library at Stillwater. Very little success when it was necessary to go to New Orleans for material.

720 Main problem: sifting the chaff. Other: few new books locally available, no apparent means of selecting those worth the effort to obtain. Blessings: USDA Library photocopies and Oxford abstract cards.



867 Considerable use is made of a few selected references, recent publications, and professional journals personally owned and maintained as desk copies or as personal office files. Next in frequency of use has been selected purchases of abstract journals and publication maintained in our station library. Our station library is small and inadequate by ordinary standards because of the accessibility of library facilities of Yale University, which we freely use.

854 We are located on a college campus where good library facilities are available so we make less use of the agency or National libraries than some others. However, we find photoprint service and foreign translations good.

845 Recommend expansion of library contacts with field personnel not having a library nearby to use such as we have here at the University. Also continue the compilation of references (subject search of literature) for such field personnel.

835 I'm located on the University of Minn. campus and rely heavily upon their library for much literature because of immediate availability. U.S.D.A. Library in Washington D.C. is used for source of photoprints of material not locally available.

729 Anyone trained in the research field, whether that occurred during his university days or during experience on research projects, and who is located on a university campus with proper library and other research facilities is not in need of help from USDA sources.

The National Agricultural Library was helpful while at Beltsville Research Center, but, in the field, less helpful than nearby university libraries.

448 Most desirable state of affairs to keep abreast of current literature is to have latest journals within close walking distance of laboratory.

337 This station is so far from the USDA Library that we do not borrow many publications, but we subscribe to the most useful journals, abstracts, and proceedings. The USDA's Bibliography of Agriculture, I find extremely useful, also their photoprint service.

279 Where a field laboratory is not located at a college or university it is important to have a cataloged reference list of the literature (bulletins and periodicals) that you have in your office. We have consistently tried to acquire and keep current a reference list of our own. This has been very valuable.

We have had no particular difficulty in getting any published information that we needed.

Wash. D.C. & Beltsville - Service by NAL

437 The library services at Plant Industry Sta. are excellent. I am amazed by the promptness in filling requests. Miss Boyd is one of the most helpful librarians I have ever met. She worked with the late Miss Hawks of our Main Library and she was "tops".

170 Have found USDA and PIS branch library to be very helpful.

587 The Agriculture Library is one of the best. We appreciate the good service.

205 The USDA library is to be commended for the excellence of its service in getting publications for reference.

871 I recently received a book from the library (USDA) about which I had been able to supply only limited information as to title, author, etc. This type of efficient assistance is very important to field personnel in research and encourages the use of library and reference services.

565 The services I have requested from the USDA Library have been very satisfactory with promptness and accuracy.

089 The system used by the USDA Library has been most useful to me. They have been quite prompt in sending articles and books I have requested.

261 I appreciated the library services rendered me from the Plant Industry Station Library. The personnel there are most helpful.

444 Our library services are good. What I need is help in transferring my abstracts of advanced basic research into a working file - to be able to reach in 5 minutes or less.



696 Have always received a high degree of cooperation and thoughtful assistance with special problems in seeking a specific article or publication.

701 I have found the library an invaluable source of information when planning a research study and in preparing a scientific or professional paper or talk.

550 Staff at National Agricultural Library is doing a fine job. Cooperation of librarians in getting books and references is very important.

454 I consider myself very fortunate indeed in having the opportunity of obtaining literature and various other information through our Library at Plant Industry. I feel however, that the load of the Beltsville librarians could be lessened by a better service in our Main Library, where workers should be able to study and browse, but find it too time consuming if possible at all.

715 I am very much discouraged over the lack of adequate financial support to our library in the Department. This should be the best and most useable agricultural library in the world - it is far from it.

650 Would it be possible to arrange the stacks in alphabetical-numerical sequence according to the contents of the shelves ? At present it is virtually impossible to find material in the stacks unless you work in the Library.

562 In the past I have found it difficult to find published material that was stated to be stored in the stacks in the National Agricultural Library.

152 The USDA library cataloging system is poor for those who may wish to browse since it does not seem to collect similar subject matter as well as it might. The Library service is good. However, mechanical or electronic aids to literature searching for scientists must soon be developed.

703 Library keeps too much outdated (older than 15 years or so) statistical report and periodical (magazine and journal) material on current shelves. This causes an unnecessary wasteful clutter. It makes material hard to find, hard to store, and easy to lose in the shuffle. I suggest the older material of this type be warehoused and cataloged outside the Library itself, but available on demand to those needing it.

702 The Department of Agriculture Library has a number of publications on the floor. Has the possibility of separating and discarding those material which are seldom used been considered recently ?

206 I like to go to the library stacks for materials when I don't know exactly what to ask for, but find the stacks of unfiled materials and the disorder discouraging.

651 The Library personnel make every effort to find requested material. However, this doesn't cover up the fact that the "stacks" are a mess. A vacuum cleaner could do wonders.

315 I have been greatly handicapped for lack of prompt library service.

666 When I came to the Department in 1930, the Agricultural Economics Library, Miss Mary Lacy, librarian, was most helpful and a real asset in conducting research. In recent years the library has been of very little assistance in conducting research. It appears to have become a librarian's library rather than a research workers' library. New members of the staff are very critical of the library and compare it unfavorably with the libraries they have used in their graduate study.

327 The USDA Library is most inadequate to fill the needs of scientists for a reference library. I don't know what current journals are taken, entirely, but the current journals shelf in the field I am interested in is meager. It would be most desirable to increase the number of journals on the shelf and to have 6 months of each journal on the current journal shelf. To keep up with things, I have to rely on the various libraries in the Food and Drug Administration.

The condition of the stacks is deplorable. Many valuable journals are piled on the floor, and so must be difficult to find things, as half of my journal requests come back marked: "Not on Shelf".

Another thing that really bothers me is the many afternoons table space is taken up by people with no real business there - folks who are getting a free look at the American Home, etc.

There is a definite need for a reference library with a respectable number of current journals and books where people can get to them. For example, the library subscribes to the Journal of Chromatography, but it never gets to the current journal shelf. Do you just go to the desk and ask for the latest issues of what you want ?

I have other ideas, too, but space does not permit my giving them all.



673 The National Agricultural Library and the service it provides could stand tremendous improvement in many respects.

First of all, to be the National Agricultural Library, its physical appearance is a disgrace. Along with the always present musty smell and dirt in the stacks, the books are always disarranged on the shelves and stacked sloppily in the aisles. I am reluctant to browse in the stacks and certainly would never take a relative or a visitor on a tour of this library.

In regard to service, there is little or none. Frequently I have desired a technical publication and have made a personal search for it in the stacks. As usual, I can never find the publication; upon checking, the library people say that the publication has not been checked out to anyone, so they make a search for the "lost publication". A few times I have never heard the results of their efforts and when I have, it's so much later that I have gone to another source.

As an employee of the Department, I would like to be proud of the physical facilities and services that the Department offers its professionals and the general public. All this, as well as the accomplishments of the Department, certainly help to breed professional loyalty to the U.S. Department of Agriculture.

In its present state, I cannot be proud of the National Agricultural Library and its services provided.

626 1. The quality of the reference librarians although improving, is well below the level of reference librarians at the Library of Congress and the level of Universities interested in research. 2. The Library's collection of books and journals in the field of economics and the related social sciences is weak. Many relevant journals are not available in the library. There are serious gaps in our file of the number of the journals we do get. Improvement of the general collection in these fields will require the acquisition of many out-of-print books. 3. Inter-library loan service is both slow and unpredictable. When the publication finally arrives, frequently it may be kept for but a few days. The slowness of service means that there is an interruption in one's research thinking. The unpredictability of the time of arrival means that it may arrive when you are on a field trip or on leave or when you are committed to other work. I have received some publications a full half-year after the original request. Perhaps the investigator should be informed about action being taken to borrow a book for him. As a consequence of the unpredictability of arrival of a book, the investigator cannot properly plan his work. In some cases, I have had but three or four days to read a five hundred page book of highly technical material at a time when I was pressed with the preparation of other work demanding immediate attention.

With respect to the basic economics collection, it is my judgment that the basic conception of economics applied in the selection of book purchases in this area is too narrowly applied to agriculture. The research of my colleagues would require access to literature in the broader reaches of monetary and fiscal policy, international economics and international or foreign economic development.

658 A significant percentage of the time the library can not find the item I need. Periodicals circulated by the library take too long to make the rounds -- so I buy the ones I really need.

656 Too often when requesting a publication from the library, you are told "it's not on the shelf, but we will trace it for you". Then you never hear another word about the request or the results of the trace.

471 I find it difficult to obtain recent numbers (i. e. within last 2 years) of scientific journals. Usually my requests come back with this notation "NOS".

305 Routine requests usually are not filled in less than 10 days. Since I usually need articles within two days, it is necessary to go to the library myself or ask a cataloger to bring the article. Working tools assigned to me usually get lost when they are returned to the library upon request. It usually takes at least one month to locate them.

446 Routing and distribution of current literature is too slow and is not consistent. Too many important journals must be obtained from downtown Agr. Library. Current literature is no longer current by the time it reaches PIS from downtown.

186 The personnel at the NAL is helpful in searching for material on selected projects. Often, however, relevant books and journals are not available when they are needed. Many references, especially of historical value, are misplaced or require that a search be made for them. This means loss of time, and frequently the book is never found.

638 When a tracer is put in for a book or other publication at the agricultural library, one never hears from the library in some of the cases. In others it takes at least a month. This is entirely too long for a professional researcher to wait. The agricultural library card catalogs are full of old references, but are not up-to-date for the most recent years -- that is, the library should obtain recently published economics books. The most recent years are the most helpful for keeping up on developments in the profession.

196 Routing and distribution of current literature was, when available, a very important source of information. The curtailment of this service has resulted in a distinct loss in many cases. The library card catalogs are useful for historical research, or for current use, if the author of a publication is known. However, under subject, the catalogs do not seem to be kept up-to-date.



196 (cont.) Current journals and periodicals are often difficult to obtain without a considerable waiting period and successive trips to the library. Also, certain journals and periodicals are now best for a limited time and obtaining copies involves an inter-library loan.

656 Question 10: A common complaint of mine and most of my colleagues is that the card catalog in the USDA Library is practically useless. Although it has many listings dating far back in years, it is far from having a near complete listing for recent years.

944 There is a real need for a separate reading room for current materials, with many more current books on display, and a more accessible display of current periodicals, with ample space to sit down and read them. The present arrangement for this class of material, in the reference room, is inadequate and not conducive to the use by those who need it.

239 The distance between the library in Washington and the laboratories in Beltsville is a general problem. If the books are to remain in Washington, could a full duplicate set of index cards be available at the Beltsville branch?

715 My difficulty is a work load that takes all of my time. It is difficult to get time in the library that is difficult to get to and formidable to use. The Library at Cornell University or that at Oregon State University is much more conducive to use than is that of the USDA.

217 Would use library more if time were available. Library staff gives excellent assistance at all times. Library needs extra copies of some periodicals, especially when subject matter content is of interest to several research divisions.

474 The library personnel have done well in supplying scientists with books, periodicals, etc., when they are requested. Because of the shortage of recent issues of journals and periodicals and shortage of personnel, scientists often miss what they should read till a year later. It is not good.

935 The USDA Library card catalog on botany was the most useful of all sources so long as it was kept up to date. Its value has now dropped enormously, however, it has become merely a starting point in any attempt to track down information.

324 I have only recently learned that I am permitted to go in the stacks. By doing so in the future I expect to save much time for myself and the reference librarians. It is much easier to find a current general work on an unfamiliar subject in the stacks than in the card catalog, for instance.

315 Often we are not permitted to keep a library publication long enough.

324 I have considerable difficulty finding periodicals in the library card catalog. It is partly due to my ignorance, of course, and also, partly because names of agencies and periodicals change. Most recent example: Annual Review of Entomology - I couldn't find it under review of entomology and couldn't remember that Annual was in its title.

236 My research requires reading about 60 current journals. I am forced to intrude on the NIH Library for half of these. The decision to stop circulation of current scientific journals is a serious handicap. I do intend to be kept alert in my field. My research funds are milked, and I don't get the necessary support in trying to be an above average researcher.

The Bibliography of Agriculture, Entomology Section, is almost useless to insect physiologists in its present format. Suggest that basic studies be put under "general" category. I can't even find my own papers in it.

Beltsville needs an enlarged library reading room for those current serial requested to circulated, but denied us because at least five in our group want to read them. Okay, stop circulation, but let us see them. My salary won't support the \$500 Chemical Abstracts; \$18 Ann. Ent. Soc. Am. and Jour. Econ. Ent.; \$10 Journal of Insect Physiol.; \$10 Agr. Food Chem.; \$50 Current Contents. I spend \$200 each year on books from my own funds.

651 My interest is in current outlook information. In making my own estimates, I find it difficult to keep abreast of current developments. I would suggest that the Library display Farm Newsletters, and such business reference as the Wall Street Journal. Some of these are routed, but not to the rank and file.

658 Most of our research is on current problems and hopefully in anticipation of future problems. Thus, the services offered by the library are of limited usefulness to me. I use my own text book, bibliographies, reference files, bulletins, etc., and those of my colleagues more than those in the library.



670 It is difficult to say which sources are most valuable. Depending upon the problem, some are more valuable than others. I suspect that the question of sources of ideas is a different one from that of sources for information once the idea or problem to be solved is known. For the most part I tend to rely upon personal contact for ideas and new approaches. I use the library extensively, however, this is primarily to obtain the information and data that some problem requires. To its greatest value is as a repository of an extensive amount of useful source material rather than a source of current ideas and approaches. I think it is as it should be.

Almost all current information is obtained through subscriptions of Soviet and East German press and current periodicals, some routed to us by the Library and others not. The major service the Library provides, as far as I am concerned, is in providing material for retrospective searching and obtaining books and periodicals.

675 I feel USDA library is behind on purchase of current books in my field of interest. Sure, we can get anything from loan services, but without an up-to-date card catalog or reference list, who knows what has been published recently. Also, something should be prepared on the library to orient new employees on its use. I have been here over 6 months and learn there is something new every time I use it. I would recommend a one or two day school for all new professional workers to explain the library system to them and how they can use it better and more effectively. The length of time it takes to get books through the Library of Congress or other sources causes costly delays in research. It is often cheaper to go buy the book and charge it to agency rather than impede research progress.

## 2. NEW SERVICES SUGGESTED:

### (1) Description of NAL services

391 I would like to have access to types and availability of information sources from National Agricultural Library. How could I get this information ?

399 It would be of high interest to know: What services of the National Agricultural Library are available to the ARS personnel located at various field stations especially in the area of literature from behind the Iron Curtain countries and an outcome of survey pertaining to their use and future needs.

406 Would like to receive an annual reminder for myself and colleagues of library facilities and services available to field personnel. Same should be more detailed and explicit than it has been in the past so that we will know what requests will be within reason.

346 List might be circulated annually to remind people of the services available to them.

201 If a specialist from the NAL could make a first-hand study of our needs, he could no doubt instruct us as to what is now available and devise a good system for us to make use of present and future material and facilities.

191 Our laboratory location is in a small town not located near a major college or university. Awareness of library services available would be of considerable benefit.

007 Informational material should be distributed on what is available from the National Agricultural Library, how it can be obtained, time interval involved, what forms if any, need to be filled out, etc. This information should be distributed at least annually, particularly to USDA locations without the adequate reference libraries which are found in universities.

098 We need to know the services available and procedure for obtaining desired information also charges for obtaining reprinted material. Field personnel at out of the way stations have little or no information on the USDA library. An information booklet of some sort would be helpful.

629 I am a relatively new employee. It would be helpful to me if I knew just what services are available from the Library.

628 Would appreciate an additional request from the library: A list and brief summary of all of the many services of the library. USDA officials (particularly research professionals) should be able to speak directly and thus utilize directly the many services available.

584 I found the circulation of current journals very helpful when this program was in effect. At this point, I am not aware of what services are available to me from the USDA Library.

570 We would like to know how we could use USDA Library facilities to better advantage in searching for literature on various subjects in our field.

569 I feel sure that there are sources available that I am not making the best use of. The library services may be able to help people make more use of these sources by letting them know what is available and how to obtain it.

520 It would be of interest to know what services of the National Agricultural Library are available to USDA employees overseas and to what extent these services may be rendered via air mail. Surface mail from U.S. to Kenya keeps one 2 months behind on current literature.

892 The USDA Library is in Washington - the researchers (in this case) are in Missoula, Montana; but the separation is more than one of distance in miles - there exists a general lack of knowledge here as to what you have there, and how best to get it. Moreover, the service is sometimes weeks in coming to us from the library. The vital research information you hold should be almost "at the fingertips" of the researcher.

894 We (Northern Fire Lab.) have had some difficulty in acquiring material from the USDA library. Part of the difficulty lies in our lack of knowing exactly how to request material and in part due to the long interval between request and receiving material.

## (2) Abstracting Service

400 Good abstracting service is becoming indispensable.

339 I would like to see more abstracts of current literature and have fewer journals circulated to me.

303 Needed is an abstracting service available to us, which would abstract information on methods, etc., pertaining to pesticides.

162 It would be helpful to have abstracting services especially of foreign journals.

032 Current library facilities are fine. An added service for abstracting, or searching, together with some type of fast, inexpensive copying procedure would be of great value.

782 Facilities which produce only lists of titles are hopeless; we need abstracts which give results; we need specific inter-connection of subject material; we need services not the address of the library.

868 Bibliographies, especially abstracted ones, are very helpful in research. But it is also hard to substitute for library catalogs; reference services; routing of references; personal contact; and personal files, master and reference lists.

676 My observation is that efforts focused upon development of abstracts and indexes have outstripped the routine housekeeping chore of keeping materials readily available. This factor has seriously limited my use of library facilities and has resulted in reliance upon personal files and specialists.

819 Abstracts and routings of pertinent literature usually precede the library acquisitions lists; thus I prefer the former. One doesn't have time for just browsing in libraries on the chance of finding something useful.

085 Because the volume of literature is so great, better abstracting services are needed than are now available.

632 It seems to me that it would be helpful if we could have an annual digest of current scientific inquiry, arranged in alphabetical order with a short, concise summarization of each study as soon after publication as practical. I would exclude popular catchy items that often lead to wasted time searching for leads.

## (3) Special Bibliographies, Lists of recent acquisitions, Table of Contents

522 If economically feasible, an annual reference list of publications for rather specific fields (e.g. Cotton Breeding Genetics) would be a great asset to the research, particularly those who have limited access to libraries.

758 I do not wish to slight card catalogs as a research tool. However, the voluminous literature in the field of entomology is better handled by periodic indexes than by card catalogs. It is possible for only the largest and best-staffed libraries to maintain up-to-date card catalogs in this field, and even then a centralized title service is needed to obtain a complete coverage of all literature.



608 More comprehensive lists, bibliographies or abstracts of articles, papers, or bulletins on farm mechanization are needed. These should be published semi-annually or annually.

618 Periodic cumulative indexes available by fields of study particularly to field offices.

375 A new publication, corresponding to "Chemical Titles" in agricultural and biological subjects would be very useful. More complete library services including bibliographic searches would be desirable (the librarian would require subject matter competence).

335 Preparation of bibliographies, particularly along subject matter lines, by the USDA Library (Wash., D. C.) has been very helpful to my research program. Since I am located on a university campus I have access to library facilities.

201 Our work is very specialized and comparatively new and limits the source of background material. Each member of our staff needs a booklet listing all publications on the field of cotton ginning, cleaning, harvesting, packaging and related research.

094 The amount of scientific literature in my field is large and poorly organized and cataloged. Literature searches are tedious and time consuming. Sometimes important and modern publications are overlooked, causing errors or duplication in research work. There are strong needs for up-to-date bibliographies that are complete.

683 Why cannot Library prepare, and circulate regularly, lists of recent acquisitions? One handicap is lack of availability of, and extreme cost of translation services. One time bibliography of cotton literature was most helpful. Another handicap is 6 months or 1 years time required to publish U.S. Government publications.

690 I think emphasis should be placed on the sorting out and classifying the available research and technical material in line with the interests and needs of Divisions or other administrative areas. Those involved in administrative and operational work require completely different research material than scientists, for example.

755 More complete subject matter bibliographies would be helpful. Translations of important foreign publications would also be useful.

025 All USDA research units need to receive cataloged reference cards on a current basis (with basic file available for new offices, etc.), in subject matter areas with which they are directly concerned (elect to receive). Present agency reference lists are not cataloged, are cumbersome to file and retrieve, and are overlapping and incomplete. Should come from central library service.

500 There are items listed that would be of great value to research personnel in the field, but are not available such as: Library acquisition list, published indexes or catalogs, routing and distribution of current literature and library reference services.

### 3. REINSTATE ROUTING PERIODICALS

027 An improved system of routing or circulation of recent issues of journals and periodicals related to the research at field locations that do not otherwise have access to such material is needed.

069 Circulation of current issues of periodicals, journals and magazines should be resumed. This especially applies to those materials the individual does not normally subscribe to. Example: Transactions of the Faraday Society.

147 Should like regularly (without having to request each one) some current journals to which our library does not subscribe, but can borrow (especially in this city) on inter-library loan. The journals the library subscribes to are the ones of interest to most of the employees and parts of my problem are different from all the others.

Would like to have my problem included in Current Articles of Interest to SU Research, selected by SU Screening Panel, which is distributed regularly before the journals are circulated.

Some articles on Microbiology are listed, but are very seldom those related to my work (problem).

Our librarian has asked for this service, listing topics of interest to me, but this Panel does not include references valuable to me and which I find months later when I receive the journals through the regular circulation procedure.

280 Circulation of current periodicals would be desirable at stations such as this one where no research library is easily accessible.



386 With so many journals and periodicals which may or may not be pertinent to the interest of the researcher, the routing and distribution of current literature is extremely slow. For the most part a glance at the table of contents is sufficient to tell whether or not any articles therein are pertinent to the investigator. It is suggested that the routing and distribution of the table of contents in sufficient quantity would improve speed of routing and current awareness of the researcher.

396 I was sorry that the routing service of the USDA library at Gainesville, Fla., was discontinued.

400 Research scientists at many field stations, such as mine, are severely handicapped by lack of access to a good research library. The closing of USDA branch libraries (actually State Experiment Station cooperating libraries, such as at Lincoln, Nebr.) which terminated the regular routing of current issues of scientific journals also has deterred research progress. Most State libraries do not offer this service.

481 The USDA circulating library managed at one time by the Univ. of Nebr. Ag. Library, was a wonderful service. It should be re-established at the earliest possible date. Journals received in the mail are the most accessible source of information.

484 A scientist must keep abreast and informed in order to become and remain an effective worker. Often times he cannot bear the cost of subscribing to what literature he needs, particularly when he is at a branch station. It is money well spent to help him in his quest for knowledge by providing him with some of this literature.

491 Concerning "routing and distribution of current literature" - The Univ. of Nebr. library formerly had a contract with USDA library to route selected journals that the individual did not have available. This was an outstanding service as few of us spend as much time in the library as would be needed to keep well acquainted with additional fields of interest.

I would like to see more use made of routing procedures for selected journals.

564 The discontinuance in 1959 of the circulation service by the University of Florida Library of journals of current interest to the USDA has caused a great deal of hardship to the research workers at this station. The excellent library service of the USDA Library does not compensate for the lack of circulation of current journals.

043 Routing and distribution of current literature in the form of periodicals is I believe an undesirable method for keeping up to date. It is not uncommon to receive these periodicals 1 year after publication on a routing list.

086 Keeping abreast of current literature was much simpler for me when periodicals were circulated systematically from the library.

085 Routing and distribution of current literature by library has been discontinued for the most important journals and it is difficult to find time to go to the library to keep up with the large volume of literature in food research.

573 The unavailability of recent publications still undergoing routing and circulation is a constant source of difficulty and delay. I think recent and current periodicals should have a much longer in-library shelf life before circulation.

560 I would like to see circulation of periodicals started again for the Agricultural Research Center. Though the Library at Plant Industry is close by, we are not as inclined to use it as if it were on the same campus as is true for the Plant Ind. employees. However, it is not as adequate as circulation. The circulation should be strictly controlled so periodicals are not held on desks for long periods of time.

545 Easy and convenient access to locally circulating, current, professional journals and other literature is vital to the research scientists; it is better to see the literature even 6 months outdated than not see it at all; a good system of circulation (including all of its well known problems) should be worked out by the NAL because, rightly it is the Library that most research scientists turn for guidance in such matters; no one could be more diligent or efficient in the business of supplying books (or journals) on request than the personnel of NAL.

544 There seems to be a fairly general feeling in our laboratory that the circulation of scientific periodicals should be increased. However, many of the research personnel use our catalog for a source of scientific information.

474 Recent issues of journals or periodicals should be circulated to scientists who need to be informed about what is going on in his own field of research, while he is busy working in the laboratory.

435 Routing of current journals should be re-established to those people who are actually actively engaged in research. Many articles may be delayed in passing from person to person, but will nevertheless, be seen whereas with the current procedure they are never seen. It takes too much time from a person's schedule to make special trips to the library merely to scan literature.

309 In the past, circulation of journals and local specialized libraries with a specialized attendant have been most valuable. Elimination of these, decreased effective library service for specialized research workers.

262 Routing and distribution of current scientific journals should definitely be reinstated. Present regulations with regard to this are ridiculous.

197 The new book shelf in the library has been very useful to me. On the other hand, the curtailment of the routing of professional journals and the slowness of routing of those that do come (e.g. English periodicals) is a handicap.

187 Our work in the food composition unit of CFE has been severely curtailed because journals important to our studies which require abstracting are no longer routed.

426 Current Contents has proven very useful since the circulation of periodicals was discontinued.

553 I do not think that problems of retrospective searching arise primarily out of deficiency in library services per se, but rather out of the lack of really adequate tools for ascertaining what references exist to information in the area of interest. Within this Division is maintained an indexing service of our own which is an invaluable aid and will become even more helpful as additional parasitological subject headings are introduced; I refer to Index-Catalogue of Medical and Veterinary Zoology, which is actually an index to Parasitology, the major area of my work. For current awareness, no system can take the place of routine circulation of those journals indicated by the worker as the ones he desires to have pass across his desk as each issue appears.

#### 4. PHOTOCOPY OR REPRINT SERVICE

567 As above, how do outlying field stations avail themselves of these services conveniently? Reprint services (photocopy etc.) that are inexpensive enough so library trips would not be necessary would be helpful. At present reprints ordered from libraries are too expensive. It would be helpful if you could order reprints of selected articles from libraries and have them inexpensive enough so you could afford to buy them.

044 Microfilming old journals would simplify looking through old journals.

168 Self-service copying services should be made readily available in library area.

135 Please continue to make photoprints of journal papers quickly available.

273 The library should provide a rapid copying service. Much time is lost in obtaining reprints of articles.

295 A Xerox machine for rapid copy service would be an excellent addition to library equipment, since present equipment is entirely inadequate and inferior to the Xerox.

190 At the division level (publications officer) a system should be set up to furnish individual researcher reprints of copies of publications in the area of his particular field and other requested information. This material should be fed directly to the individual researcher in the field. Part of research administration should be to keep the researchers up-to-date on the problems assigned to them, and to encourage the researchers to publish their results as soon as possible.

314 In this work it is necessary to see the original publication whenever possible in order to determine the actual date when the published information was made available. This date is not always the same as that on the cover or binding; it may appear inside somewhere as "date of issue" date of mailing" date of publication". This actual date of publication is important in any of the fields of Zoology (of which Entomology is a part). Any plans to restrict the circulation of publications and substitute photostated pages in place of the complete book, journal, or whatever, would be a great handicap to any workers concerned with problems of insect taxonomy.

516 Photostat copies of papers are good sources of information. Need more journals covered in USDA Library service, however.



310 Because of our limited size and space, we must depend on the USDA library for copies of important papers; and photoprints are rather expensive. (Alaska)

## 5. TRANSLATION SERVICES AND FOREIGN JOURNAL COLLECTION

690 I find the USDA library service, particularly the foreign material, to be excellent.

779 I have found the USDA Library very good at obtaining old or foreign papers. Most of the current and domestic material is available in the local libraries.

256 Many good articles are printed in foreign journals, in foreign languages, which are pertinent to my field. What is the procedure used to obtain these articles and translations of them ?

062 I would like to be able to obtain foreign publications and have them already translated.

443 The National Agricultural Library is not as fully up-to-date on technical publications, especially foreign, as they ought to be.

174 The time involved in getting reprints of articles in foreign journals often involves two or more months through the library. Library services in other respects are excellent.

093 Attempts to obtain foreign literature have been unsuccessful. Lists of foreign publications are lacking and translations of articles are even more lacking.

759 The biggest problem is keeping up with good foreign work. It is hard to find out about what is available. Routing of translations will not help; one must know of the publication before a translation can be ordered and some translations have been quite inaccurate.

693 1. Too time consuming - press of current activity does not permit search for reference material. 2. Material available is not sufficiently current, especially as regards information from foreign countries.

081 We need more and broader range translations of foreign articles.

778 I would like to see better arrangements made for acquisition of Scientific material from foreign countries. For example, I wanted to obtain a particular article from the Indian Govt. Publication Office. The Indian Govt. would not send the reprint until it received the money for it and the U.S. Govt. wouldn't pay for the reprint until it was received. I ended up buying the reprint myself out of my own pocket. It also cost me as much for an international money order as it did for the reprint. This system seems to be rather inefficient as far as the distribution of scientific literature is concerned.

787 I would appreciate being made more aware of foreign translations and abstracts.

829 One of the biggest library or reference needs is not covered in this questionnaire -- that of the need for translations of foreign language research publications - particularly Russian, Finnish, and Swedish articles in Forestry.

503 Thought should be given to problem of translation of foreign material. Graduate school training in language inadequate for rapid translation and it is too time consuming to learn.

006 Need rapid access occasionally to some of the more obscure foreign journals.

## 6. COMMENTS ON OTHER THAN NAL INDEXES OR ABSTRACTS

933 The new format of ASTIA technical abstract bulletin, makes it more difficult to cover all of the listings without extra effort. Also these listings are duplicated by OTS. This provides a duplication of service rather than additional services and makes periodic review by individuals more laborious.

052 The uniterm index to chemical patents is very fine. Wish Chem. Abs. could be so arranged so we can cut down on our searches.



930 One of my most important sources of technical information is the abstracting journals. However, certain features of some of these journals necessitate laborious perusal. For example, the ASTIA Title Announcement Bulletin has for about 2 years been using a print which, in my opinion, is much more difficult to read. In another example, the regular issue of the OTS publications announcement employs a scheme for categorization of articles that seems chaotic. From my personal viewpoint, review of these bulletins is rendered unnecessarily difficult and time-consuming because of the described features. Perhaps, more attention should be directed toward legibility in preparation of such publications, and I personally would encourage any pressure that can be applied along these lines.

811 May not be your concern at all, but change of Biological Abstracts to use of BASIC and abandonment of "Sections" (which are a fifth of the price of the complete edition) is a problem because we browse in the publication, BASIC is fine for searching, but is not a substitute for the abstracts themselves.

785 I believe the relatively new "BASIC" system of title abstracting and listing is a good crude start which could be made more effective by (1) separating into broad disciplines (too much "drivel" to look at now), and (2) using larger type.

389 The most useful method for keeping up-to-date on current publications has been regular use of Chemical Titles. The biggest problem is obtaining copies of journals which are not available in the library at Western Regional Lab. or easily accessible at other libraries.

296 Chemical Abstracts is a main source, but about 6 months behind. Attendance at scientific meetings, current journals and abstracts of papers to be presented before publication help to keep information up to date.

287 The journal "Tobacco Abstracts", prepared and published by the North Carolina Experiment Station, is the most valuable source of information in tobacco research. More such efforts in other agricultural fields would probably be useful to those working in these fields.

280 I find I must rely on abstracting journals for most of my sources. These are usually 1 to 2 years behind the field and are usually only useful for methods.

274 Indices to abstracting journals (for example Chemical Abstracts) are becoming so delayed that they are almost useless for maintaining current awareness. BASIC makes Biological Abstracts more dynamic.

261 A research worker usually has a definite problem to be solved. The only literature a researcher is interested enough to read in is something pertaining to his problem. I consider the abstracting journals or services invaluable such as Current Contents, because one can do a quick scanning with a relatively short time.

163 Regarding question #10, published indexes (for example those for Chem. Abs.) are published too late to be of use in finding current information.

072 In reviewing pertinent literature, I use the Agricultural and Engineering Indexes almost exclusively then articles in the index are reviewed to find other sources.

506 The British abstracting journals are very useful for my work: Review of Applied Mycology, Plant Breeding Abstracts, Empire Cotton Grower Review.

530 It seems about time that profession journals began publishing their tables of contents separately and making these tables available to non-subscribers for a nominal fee. Perhaps there is a need for journals in the several fields which publish nothing but the tables of contents of other journals. One can afford to subscribe to only a small number of journals, and, consequently he frequently is ignorant of an important paper in another, perhaps obscure, journal until he reads an abstract of the paper long after its publication. Those far from large libraries are especially handicapped.

559 It should be noted that the "Index-Catalogue of Medical and Veterinary Zoology" and the "Treatment Catalogue" maintained at the Beltsville Parasitological laboratory are invaluable aids in our type of research.

## 7. NAL COLLECTION NEEDS

609 Agriculture is very important in international economic development. It is also important to U.S. trade, accounting for one fourth of U.S. exports. The F.A.S. and two divisions in E.R.S. work on these aspects of agriculture. It would be helpful if the library had more publications relating to our work. These would include journals and recent books on social, economic, and political problems in the underdeveloped countries. An example is Kyklos, the International Review for Social Sciences.

657 The personnel of the library generally try to be helpful. The coverage of current economic literature in the library, however, is negligible. The library should at least maintain a complete file of economic journals even if they do not carry new books.

125 Library acquisition list generally has very few papers on bacteriology.

169 In most cases I must depend on memory of article and journal for information retrieval. The trip to library is too time consuming for frequent use. Furthermore the USDA library tends to chemistry and not engineering.

562 Would like the National Agricultural Library to have a more extensive collection of technical magazines pertinent to the various segments of the chemical and allied industries e.g. coatings field, lubricant field, thermal insulation field. My work requires familiarity with publications related to the practical and economic aspects of the chemical and allied industries fields.

178 We are badly in need of library work in textile literature whereby it can be found easily. Something like Chemical Abstracts. It is now in a confused situation and getting worse.

179 The NAL seems to lack any great amount of historical material on the application of electricity to agriculture. Our office files seem to have considerably more material that is occasionally needed.

160 My greatest need at present is for technical information about highly specialized commercial products.

193 The USDA Library has been unable to obtain many reference materials requested through the years on subjects in the physical and engineering fields.

220 Many books I use are available in the Library of Congress, but obtaining them for use in my office is not satisfactory. The time for transportation limits time in use. The books on textiles or pertaining to their end use are few in the NAL compared to other subject matter fields.

#### 8. IMPROVE TECHNIQUES OR PROCEDURES

897 Translation services have been good. An effort should be made to locate the mass of literature by punch cards, electronic equipment etc. and to distribute it through closed circuit television, telegraph, etc.

846 It seems to me it is about time that USDA take advantage of advances made in computerized information retrieval systems. I believe the main problem for the researcher is obtaining up-to-date lists of pertinent references prior to beginning studies. Also, there is sometimes great delay in obtaining references.

129 Electronic systems should be installed as soon as possible as it will have to be installed eventually.

806 A literature search and retrieval service would be most helpful.

788 So much material pertaining to watershed comes from different gov. agencies, i.e. - FS, SCS, Corps of Engineers, USGS, etc. Much of it is repetitive or pertains only to a small specific area. It would be fast and efficient to have a central pool of all this data and material for requesting purposes.

773 Keeping abreast of the ever expanding volume of scientific literature becomes a more serious problem every year. My colleagues share my feeling of inadequacy in coping with this problem and trust that the questionnaire will help to indicate which sources have been most fruitful. We suspect, however, that the responses will vary greatly. It is hoped that a way may be found to catalog titles of world literature (including journal articles) electronically, but first some way must be found to screen important work from trivia. I hope that someone competent in the field of library services will find a solution to this urgent problem.

251 With the tremendous growth of scientific literature, I believe that effective retrospective searching will have to be done by persons specially trained and assigned to that duty but with basic training in the fields of science they will cover. This work would have to be centralized if machine methods should be adopted for searching, but that would have some disadvantage in that it would make difficult any close liaison between the literature searcher and the scientist who wants the information.

747 Isn't cataloging the place to begin mechanized information handling ?



813 We sadly need an "information extraction service", an agency to which you could send for literature searches, e.g. - a list of references on systemic fungicides or plant tissue culture and on down to more specific topics; also charges for photocopying service for those accumulating a literature file. Former system could be handled as does BASIC index via IBM.

365 There is an acute need for some faster method by which divisional libraries can directly order new books. The time-lag has been especially long in the case of books ordered from overseas sources.

#### 9. CRITICISM OF THE INDIVIDUAL RESEARCHER OR AGENCY'S POLICY

138 Source of information p (attendance at scientific and technical meetings ) in each question could be most advantageously used in many instances if administration policy was so inclined. It could be a most useful source if those directly involved with the research problem were permitted and encouraged to attend scientific technical meetings and meet with scientists and engineers.

575 All things considered, I think the libraries render a most helpful service of varying nature and wide scope. All services that I have received during the past 40 years from USDA, Library of Congress and other Federal libraries, various state libraries, have been efficient, thorough, painstaking, and cordial. It is unfortunate, I think, that more people -- especially research people -- do not use the present library facilities more extensively. There is a growing tendency, it seems to me, for the young research recruits of today to "fire off" with new project statements and to get going as fast as possible, without first surveying and digesting the published literature on the subject in question, and without ascertaining what is known and not known about the subject, how the knowledge was obtained, and what difficulties were encountered. This, however, is the fault of the individual research worker and not of the library services. His attitude and approach need improvement !

928 My worst library problem is convincing my boss that library searching and literature reviewing is not a waste of time. My searching is done surreptitiously on the sly and this is very discouraging.

The biggest problem in literature reviewing and usage is the government literature - it is the least accessible. The first ASTIA Index covering documents 1 - 70,000 is a start, but just try and retrieve information from documents 70,000 on up. It is very disheartening. It would be a real contribution to have the rest of the documents indexed.

336 Item 1. Attendance at meetings have been available, but I have not been able to attend many because of inadequacy of funds.

226 I would like to see improvement made in the routing and distribution of current literature. Men in the lower echelon rarely get to see such literature, even if their names are on the circulating lists.

077 Criticism of our Agency-Division policy: Recent or newly received journals and periodicals remain on the desks of our administrative superiors for an unbelievably long period (sometimes several weeks) before being circulated to those of us who are actually doing the research.

338 A better budget for desk copies of technical and reference books would help provide information when needed and save time. It is difficult to get approval of librarian for extra desk copies of important books. In addition since the majority of good books are out on desk loans it is not easy to browse in library.

049 Administration of our budget is such that it is difficult to obtain new books, while new equipment of much higher cost is relatively easy to buy.

329 My experience indicates that library policies at field stations reflect the ideas of the local directors. This is desirable to some extent, but there should be certain fundamental policies uniform in all stations. The National Agricultural Library should disseminate information on and encourage the use of modern library techniques as they are developed. Useful information often originates from Dissertation Abstracts. Are photocopies of dissertations readily available for our use ?

#### 10. PERSONAL CONTACTS AS A SOURCE OF INFORMATION

765 Contact with colleagues (by correspondence, too) personal files, abstracting journals and bibliographies are the most useful tools I have found in my research. Office reference files and superior periodicals are the best aid.

794 I take a great deal of leave without pay to attend lectures and seminars and I feel that it is in these hours that I find most of my rewarding information ideas. The only way that I can show this on this is by checking the inadequate "Personal or Professional Activities outside USDA".



736 Regarding question 2, new ideas are our most important need and the most difficult to obtain. Foreign travel or international meetings where it is possible to discuss problems and studies with counterparts who have taken entirely different approaches is especially good.

001 Research workers carrying out related studies in the various places of the nation should contact each other more frequently. Progress reports or short notes are a good means of achieving this.

958 Do most general researching through personal contact and continued watching of current publications and related routed references.

825 A related subject - Relaxation of regulations concerning corresponding with workers in "Iron Curtain" countries would be very helpful.

024 Most of my research has been confined to a reasonably narrow field of agriculture in which specialized technical papers are most useful. However, there are frequent cases in which a paper will appear in a journal not usually reviewed and this paper may prove to be very valuable. Consequently, the abstracted journal service is most valuable. Above all, personal contacts with colleagues and attendance to scientific and technical meetings are the best source of material.

920 I work in an area of sponsored Military research to a considerable extent. In this area, information is seldom published, but reprinted in individual project reports. These are hard to locate. Personal contacts are important.

#### 11. NAL INTERLIBRARY LOAN SERVICE

546 1. I have to wait too long for books that have just been printed. 2. I don't want the library to question me with: "Is this material needed for official duties?" To me, all information is "official" since it is a source of good ideas. 3. The library should ask for all materials I request. They shouldn't ask me: "Shall we borrow this". If I didn't need it, I wouldn't ask for it. I don't care if they need to borrow it. That's their job, not mine.

021 We maintain a small library of our own at the laboratory, and interlibrary loans are an invaluable service for obtaining needed information.

333 I find a need for opening the channels of communication between the individual research worker and the USDA Library for such services as photostats and book loans. These things are possible (within limits), but they are needlessly slow and devious; communication should be direct and service prompt. I do not know the solution to the problem of the research worker having access to the broad spectrum of journals that he needs (unless he is located near a major library), but there is a problem. Abstracting journals are very helpful, but they are not entirely adequate. Why cannot the USDA library involve itself with the inter-library loan network? I have encountered great problems in procuring library materials that the USDA Library did not happen to have and that I could not find locally. An Inter-library loan could solve such problems simply.

449 I am somewhat surprised at the number of articles the USDA Library (Washington) does not have on hand in the field. Examples, Annual Reports of the Rockefeller Foundation from the country of Columbia for the years 1950-53.

The long, laborious job of obtaining interlibrary loans is frustrating to say the least. Logistics, mode of transportation and who bears the cost, seem to play an important role in the transactions of borrowing material from foreign libraries. Example, University of the West Indies, location Trinidad, will loan material for 30 days. It is shipped by surface mail requiring about 2 weeks, leaving 2 days for use before it is shipped back in time for it not to become overdue. And perhaps the first time it is overdue then no more inter-library loans. The procedure for handling interlibrary loans needs to be more efficient and expeditious.

#### 12. GENERAL COMMENTS

293 The continued increase in the number of scientific journals has made it impractical and undesirable for an investigator to even read the titles of all the articles related to his field. However, it is essential for him to become aware of and have available pertinent literature. I think that scientific literature can best be used by reviewing a specific subject as needed, that is, reading for a purpose rather than to accumulate facts.

- 287 The biggest problem is finding time to read all that should be read, not just cursorily, but thoroughly, with subsequent organization, digestion, and use of what is read. Library services can't help much in this, unfortunately.
- 862 A major difficulty is availability of articles in obscure or unnumbered series of publications. Many agricultural experiment station publications and one-time reports of committees and similar bodies are of this kind.
- 641 Many results of economic research are published first, and sometimes only, in mimeographed form. Is there any practical way of keeping abreast of such releases ?
- 821 In my field, a screening and selection of trade journal articles would be most helpful.
- 404 Since I am concerned with only one crop - sugarcane, it is not difficult to keep informed since we have all the current publications available.
- 844 In general, I find that the services obtained from libraries are very good. There may be a lack of awareness by researchers of material available on certain subject.
- 777 The time lag is frequently too long between completion and publication of research results. Some means of speeding up may be helpful toward progress in forest insect research.
- 783 I find it difficult to maintain personal and agency reference files. Recovery of titles from lists for use has often been unreliable and slow, suggesting that I need a more comprehensive filing scheme.
- 750 There are occasions when a search of old literature is required even though it is not current.
- 448 Most desirable state of affairs to keep abreast of current literature is to have latest journals within close walking distance of laboratory.
- 417 Trying to keep abreast of current trends and findings is very time consuming and therefore I am able to do only a poor job of current literature reading. Anything that would speed the process would indeed be a help !
- 384 Language problem is important, of course. Also the prompt location of information in station or other publications that have restricted circulation.
- 361 The whole field of information retrieval is fascinating, but while I have tried to make the best use of available resources, I have consciously avoided getting concerned with the broader aspects because it would divert time which should be spent on my assigned duties.
- 528 In my work the Bibliography of Agriculture is very useful. May I suggest that its usefulness is somewhat impaired by its bulkiness. In my case I refer to the "Plant Science, New Periodicals, Translations, and FAO Publications". The remainder of the listings are very much of a nuisance mostly because of the bulk - to which I very seldom refer. Thus, storage space is used unnecessarily. Would it not be possible to put this into several sections. The added summary of numbers is good and is regularly used by my students and myself.
- 771 It would be helpful if the author's address were listed in the Bibliography of Agriculture abstracts. This would facilitate reprint requests from author and reduce requests for article to National Agricultural Library.
- 216 Copies received when requested of important papers published in hard to get journals are very useful.
- 214 Our only library use is to request reprints of journal articles. We do purchase from project funds reference books for our use.
- 118 More comprehensive review articles would be very helpful in keeping abreast of current literature.
- 107 Ref. Items 9 and 10. The literary deluge of published information defies the most Spartan effort to keep abreast of pertinent information in a field where aspects of virtually all the basic sciences meet and are important as is the case with soils. The literature is simply overwhelming even if one had no other time commitments or a responsibility for research.
- 348 There is only time now to read titles of papers unless they interest us. Therefore, titles to scientific papers should be properly and indexed very carefully by librarians, etc.



092 Keeping abreast of the literature in one's field of interest is becoming increasingly difficult. It requires concerted effort. At times I have probably spent too much time reading scientific and technical publications.

073 The first and foremost problem in A&S is dissemination of new technical information, to those who indicate need, as it is published. Current duplicative buying of periodicals by agencies and the library is very wasteful.

063 The unprecedented growth in current scientific literature is creating unprecedented, perhaps insoluble problems for the investigator -- it is physically impossible for him to both investigate and keep properly abreast of pertinent scientific literature. Our library service needs to take imaginative leadership in attacking the problem of collecting, collating, cataloging and retrieving information so that the investigator can be provided with the means for determining the current status of progress in his specific field of inquiry and have time to profit from this information.

419 The biggest problem today is available time one can spend on current literature. This point is not specifically mentioned in this questionnaire. Sources used frequently are determined by the time one can spare or make in his overall program. Those of use in USDA stationed at large universities are very fortunate indeed when excellent library services are available. The only problem is the one mentioned above.

896 Mass of available literature on any general subject now too great to either collect or assimilate. More needs to be done to condense and consolidate information on many subjects - but by whom ?

563 One method that I have used for surveying unfamiliar literature is to start with one or more current articles in well known journals and work backward through the literature cited in the papers. This method depends upon good library facilities. The use of abstracting journals and comprehensive review articles is possibly more rapid and is less dependent on the library facilities.

018 Data retrieval should be a regular service of libraries.

479 The purpose of this questionnaire is, I presume, to find the current status of information transfer and to devise better methods for it. In my opinion the journal system is inefficient. There is too great a time lag between the date of completion of the research and its publication. Articles on the same topic are too often published in journals without wide circulation.

248 Few other people are engaged in studying the sawfly and therefore there is not much material published which has direct bearing on my work.

090 The volume of information on many subjects is becoming so great and widespread in various publication media it is becoming increasingly difficult to keep up, even with recent steps to overcome this problem.

096 Current awareness comes from the diverse personal contacts and the scanning of broad spectrum journals, such as Science, Nature, C and E News, etc. This is firmed up by reviews, selected abstract sections, and all too infrequent time to browse. Biggest needs are in this firming up through specialized brief reviews (Anal. Chem. and Nutrition Reviews are excellent) and annotated bibliographies. Most used and most useful special library services are in obscure reference tracing, catalogues, and reference lists to non-journal report holdings, legal reference search, and quick guidance into key references in an unfamiliar field.

460 My biggest problem is keeping up with the flood of subject matter. Very few things can I read carefully. Abstracts, reviews, summaries, and conversation become my only chance to keep in touch in many fields. More and more I use the telephone or mail to contact the specialist because I simply can't take time to dig out what I want to know. In some fields, I am reduced merely to scanning titles to find out what is going on. I can't even take time to attend many sponsored lectures on the campus. It all boils down to more and more need for capsule information on what is being done and learned -- written for consumption "at a glance".

299 Entomological research involving insect biology entails an awareness of literature in many scientific fields since the numerous intricacies of insect behavior are governed by food, soil, air, water and their interactions.



# NATIONAL AGRICULTURAL LIBRARY TASK FORCE

## INQUIRY ON LIBRARY SERVICES WHICH PROVIDE ACCESS TO SCIENTIFIC AND TECHNICAL PUBLICATIONS

September 1962

If your name and address  
as given at left are in-  
complete or incorrect,  
please make corrections.

The National Agricultural Library Task Force is trying to determine how U. S. Department of Agriculture scientists keep informed on research progress in their respective scientific fields. To measure this, another questionnaire has been mailed to other personnel. The Task Force is also trying to assess the role that libraries, especially the National Agricultural Library and those libraries associated with it, do play or, in your opinion, should play, in getting needed information to our scientists. This questionnaire is designed to measure this. Your cooperation, through answers to the following questions or by appropriate comment where called for, will make it possible for the Task Force to gain its objectives.

USDA Agency \_\_\_\_\_ GS Grade \_\_\_\_\_  
Civil Service Job Title \_\_\_\_\_

1. Please give a short description of your principal duties in U S D A:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. How long have you been carrying on these duties? \_\_\_\_\_ (years)

3. Are the following facilities for getting information needed  
in your research programs available to you?

Yes No  
( ) ( )

A. Personal library and reprint file----- ( ) ( )

B. Literature purchased or owned by your agency and  
immediately available to you----- ( ) ( )

C. University or other non-USDA research library----- ( ) ( )

D. National Agricultural Library, Washington, D. C., (including  
the Beltsville and Bee Culture libraries)----- ( ) ( )

E. USDA agency field library----- ( ) ( )

F. Other facility (specify)  
\_\_\_\_\_  
----- ( ) ( )

\_\_\_\_\_  
----- ( ) ( )

4. Libraries offer a variety of services. Listed below are the services which agricultural research scientists might need from a library. If there is a library close to where you work, please first indicate whether the listed services are or are not available at that library, and second, comment on these services. We are eager to receive your comments, and they might include remarks on any aspect of each service whether available to you or not.

<u>Library Service</u>	<u>Available</u>		<u>Comment</u>
	<u>Yes</u>	<u>No</u>	
A. Lending books-----	( )	( )	_____
B. Lending periodicals:			_____
(1) On specific request-----	( )	( )	_____
			_____
(2) By scheduled routing-----	( )	( )	_____
			_____
C. Furnishing access to published indexes and bibliographies-----	( )	( )	_____
			_____
D. Compiling special bibliographies	( )	( )	_____
			_____
E. Supplying reproductions of publications:			_____
(1) Direct reading size-----	( )	( )	_____
(2) Micro form-----	( )	( )	_____
F. Supplying reproductions of tables of contents of periodicals-	( )	( )	_____
G. Furnishing reference help-----	( )	( )	_____
			_____
H. Furnishing access to library card catalog-----	( )	( )	_____
			_____
I. Furnishing library catalog in printed form-----	( )	( )	_____
			_____
J. Furnishing lists of newly received books and periodicals----	( )	( )	_____
K. Abstracting-----	( )	( )	_____
L. Translating-----	( )	( )	_____
			_____

5. Most research workers subscribe to one or more periodicals that contain papers in their fields of interest. Agencies of the U. S. Department of Agriculture may pay for subscriptions to other necessary periodicals. Now, assuming that the National Agricultural Library receives those journals which you or your agency do not buy, what do you think are practicable means by which the Library could keep you informed on the content (i.e., data, subject matter, substance, etc.) of those journals? Write your suggestions here: \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

- |  | <u>Yes</u> | <u>No</u> |
|--|------------|-----------|
| 6. Do you or does your agency make an effort to maintain a special bibliography, a card catalog or a similar aid to keep you informed in your scientific specialty?----- | ( )        | ( )       |

If your answer is yes, please specify here what aid is maintained:

\_\_\_\_\_

\_\_\_\_\_

Please comment on the usefulness of this aid: \_\_\_\_\_

\_\_\_\_\_

7. Do you or does your agency distribute this aid to workers at locations in other geographical areas?----- ( ) ( )
8. If your answer is yes,
- A. is it supplied only at the request of those other workers?----- ( ) ( )
- B. in what form (i.e., mimeographed, printed, duplicated cards, etc.) is it distributed? \_\_\_\_\_
9. Do you know about key word in context title indexes such as are now supplied by Biological Abstracts?----- ( ) ( )
10. If your answer is yes, have you used an issue to identify literature that would have a likely pertinence to your research?----- ( ) ( )
11. If your last answer is yes, did you find a reference to any pertinent literature the last time you used an issue?----- ( ) ( )

\* \* \* \* \*

THERE HAS BEEN EXPRESSED CONSIDERABLE CONCERN ABOUT THE NEED FOR DEVELOPMENT OF METHODS THROUGH WHICH TODAY'S SCIENTISTS CAN BE KEPT BETTER AWARE OF RESEARCH WORK OF OTHERS.



12. Can you recall of one instance in the last two years when, after you had started a piece of research, you discovered that the work or a significant part of it had already been done?----- ( ) ( )
13. Did you drop that line of research to avoid duplication?----- ( ) ( )
14. If your answer is yes, how much of your own time do you estimate that you invested the last time this happened?\_\_\_\_\_ (days)

\* \* \* \* \*

TWO SOURCES THROUGH WHICH YOU MAY GAIN ACCESS TO PUBLISHED INFORMATION HAVE BEEN CHOSEN AS A BASIS FOR QUESTIONS AND FOR YOUR EVALUATION. THESE SOURCES ARE THE BIBLIOGRAPHY OF AGRICULTURE AND BIOLOGICAL ABSTRACTS. PLEASE ANSWER THE FOLLOWING QUESTIONS ABOUT THESE PUBLICATIONS:

- |   | Bibliography<br>of<br>Agriculture |           | Biological<br>Abstracts |           |
|---|-----------------------------------|-----------|-------------------------|-----------|
|   | Yes<br>( )                        | No<br>( ) | Yes<br>( )              | No<br>( ) |
| 15. Do you see issues of this publication?-----   | ( )                               | ( )       | ( )                     | ( )       |
| 16. If you do see issues of either or both, are they:   |                                   |           |                         |           |
| A. a personal set?-----   | ( )                               | ( )       | ( )                     | ( )       |
| B. circulated to you?-----  | ( )                               | ( )       | ( )                     | ( )       |
| C. available in your building?-----   | ( )                               | ( )       | ( )                     | ( )       |
| D. available in library close to where you work but<br><u>not</u> in your building?-----  | ( )                               | ( )       | ( )                     | ( )       |
| 17. Do you see issues of these publications often enough so<br>that you are acquainted with the organization of their<br>contents?----- | ( )                               | ( )       | ( )                     | ( )       |

If you use neither of the publications referred to, do not complete questions 18, 19, 20 & 21. If you use one or the other, or both, fill in answers to questions 18, 19, 20 & 21.

18. Is your use of these publications:
- A. to keep aware of results of current research?----- ( ) ( ) ( ) ( )
- B. to select literature references when you are reviewing what has been done on a problem in your scientific field?----- ( ) ( ) ( ) ( )
19. We need to know your opinion of the adequacy with which literature in one of your areas of special competence (i.e., plant physiology, agricultural engineering, etc.) is covered in the two publications. Please specify the name of that area of competence here:
- \_\_\_\_\_

THEN ANSWER THE FOLLOWING QUESTIONS ABOUT IT:

- A. Does coverage of literature published in English seem adequate?----- ( ) ( ) ( ) ( )
- B. Does coverage of literature published in foreign languages seem adequate?----- ( ) ( ) ( ) ( )
- C. Does coverage include too many references?----- ( ) ( ) ( ) ( )

20. Following publication of each volume there is issued a cumulative author index and a subject index.

A. Did you use the latest cumulative author index to assemble references by chosen authors which contain information pertinent to a problem in the scientific area specified under question No. 19?-----( ) ( ) ( ) ( )

B. Did you use the latest annual subject index to assemble references such as those referred to above?-----( ) ( ) ( ) ( )

C. If your answer is yes, did you get references to publications that contained less specific information than you wanted?----- ( ) ( ) ( ) ( )

D. Does the annual subject index seem to represent an efficient method by which you may determine which publications you should get?----- ( ) ( ) ( ) ( )

E. In the past year did you make a comprehensive search of the subject indexes of as many as 6 volumes for access to information on any one official research problem?----- ( ) ( ) ( ) ( )

F. If your answer is no, your reason for not making such a search would be helpful \_\_\_\_\_

21. Have you any comments on the cross-referencing in the annual subject index of the Bibliography of Agriculture? If so, please make them here: \_\_\_\_\_

22. Please comment on any aspect of the Bibliography of Agriculture that is not covered by the preceding questions: \_\_\_\_\_

23. Are there published abstracts or bibliographies that are of equal or greater value to you than the Bibliography of Agriculture or Biological Abstracts?----- Yes No  
( ) ( )  
If so, list them \_\_\_\_\_

SERVICES QUESTIONNAIRE  
LIST OF CHARTS AND STATISTICAL TABLES

Fig.	S1	Question 3 - Facilities Available to the USDA Research Scientists, Field and D.C. -Beltsville
	S2	Question 4 - Library Services Available close to where USDA Research Scientist Works, Field and D.C. -Beltsville
	S3	Question 6-13 - Search Tools Available to USDA Research Scientist, Field and D.C. -Beltsville
	S4	Question 15 - Do you See this Publication ? Bibliography of Agriculture and/or Biological Abstracts.
Table	S5	Question 15 - Do you See Issues ? Total Number of Responses, Bibliography of Agriculture and/or Biological Abstracts and Percent of Total, each Publication by Discipline groups
	S6	Question 15 - Do you See Issues ? See Both, See only, See at Least, See neither, Total Number Reporting, and Number in Population by Discipline groups
Fig.	S7	Question 16 - Availability of the Publication, (Bibliography and Biological Abstracts), Field, and D.C. -Beltsville
Table	S8	Question 16 - Availability of the Publication, Field, D.C. -Beltsville and All Scientists
Fig.	S9	Question 15 and 17 - "See Issues" and "Acquainted with Organization of contents" Bibliography of Agriculture and Biological Abstracts by Discipline groups
Table	S10	Question 17 - Are you Acquainted with the organization of the contents ? Bibliography of Agriculture and Biological Abstracts by Discipline groups, by grade, and area.
	S11	Question 18 - Use of Publication (a) to keep aware and (b) to select references
	S12	Question 19 - Adequacy of Literature coverage, published in English, in foreign language, and too many references. Bibliography of Agriculture and Biological Abstracts by Discipline groups.
Fig.	S13	Question 18 and 20 - Use of Bibliography of Agriculture by Discipline groups
Table	S14	Question 20 - Use of Cumulative Author and Annual subject Index, Bibliography of Agriculture and Biological Abstracts, by Discipline groups
	S15	Question 23 - Published abstracts or bibliographies that are of equal or greater value to scientist than the Bibliography of Agriculture or Biological Abstracts.
Tables	1-22	Summary of Inquiry, question 3-20 by 2 grade groups, Field and D.C. -Beltsville. Number answered "yes", "no" did not answer, and percent of total response; with percent "yes" plus percent "no" equal to 100 percent. These percentages are on a different basis than Tables S10-12, 14



# SECTION THREE

## INQUIRY ON LIBRARY SERVICES WHICH PROVIDE ACCESS TO SCIENTIFIC AND TECHNICAL PUBLICATIONS

### RESPONDENTS

There were 764 questionnaires tabulated out of a total of 916 mailed. In the following table is shown the number of respondents according to grade, job classification and location. Grades 7 through 11 have been combined as a junior grade classification and grade 12 and above as a senior grade. The job classifications have been grouped into 10 classes. For the detail of the Civil Service title codes included in each group see Table SP-1 in Section Two.

Number according to grade, area, and job classification.

Job Class Group	Junior Grade G.S. 7-11			Senior Grade G.S. 12 and over			Total all grades		
	D.C. & Field	Belts. No.	Total Areas No.	D.C. & Field	Belts. No.	Total Areas No.	D.C. & Field	Belts. No.	Total Areas No.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	13	21	34	13	48	61	26	69	95
2	36	2	38	28	8	36	64	10	74
3	25	9	34	39	18	57	64	27	91
4	20	6	26	25	2	27	45	8	53
5	59	1	60	51	2	53	110	3	113
6	17	1	18	20	3	23	37	4	41
7, 8, 9	27	2	29	41	7	48	68	9	77
10	69	9	78	56	21	77	125	30	155
11	5	5	10	5	-	5	10	5	15
12	13	6	19	21	10	31	34	16	50
Total	<u>284</u>	<u>62</u>	<u>346</u>	<u>299</u>	<u>119</u>	<u>418</u>	<u>583</u>	<u>181</u>	<u>764</u>

### FACILITIES

Question 3 - Are the following facilities for getting information needed in your research problems available to you ?

Question 3, parts A through E, was designed to determine what facilities for obtaining information of previous work in the scientist's field are available to USDA research workers. It does not measure the usefulness of the facility, nor the relative importance of the various facilities. However, it narrows it to a facility that serves the researcher's specialized field. This is in contrast to question 4 which asks services available from a library close to where he works. There a general purpose library may not qualify for question 3, but may be reported for question 4 which relates to a library that is close. Thus the services in question 4 do not necessarily relate to the facilities in question 3. See Fig. S 1.

A. "Personal library and reprint file", and B. "literature purchased or owned by the agency and immediately available to the researcher" are facilities serving all but about 7 percent of the USDA scientists. A slightly higher percentage of the senior scientists in the sample have privately owned books and reprints compared with the junior grade. This facility was reported by 95 percent of the senior grade compared with 91 percent of the junior grade. A little lower percentage of research workers located in the D.C. -Beltsville area own literature important to their research than do field scientists. This reflects a lessened need for the individual scientists to own literature when he is located in an area that has important scientific literature readily available from the principle libraries or from the agency collection. About 96 percent of the respondents in the D.C. -Beltsville area states that their agencies buy literature for the research worker, while in the field only 91 percent of the respondents reported that agency-owned literature was available.

#### Libraries:

C. University or other non-USDA research library -- Since many USDA research scientists in the field are stationed on University campuses or in the immediate vicinity of Universities, it is not surprising to find that University or other non-USDA research

libraries are reported by 83 percent of the field workers. The remaining 17 percent are required to seek facilities outside of their local areas. A review of individual questionnaires showed there was a wide range in the scientist's interpretation of what was "available to you". Some researchers reported "yes" this facility was available, but an explanatory note showed the facility to be from 50 to 400 miles away, or in other cases "yes" was reported for a service available only by mail. On the other hand there were some reports of "no" with the explanation that the facility was not in the immediate vicinity.

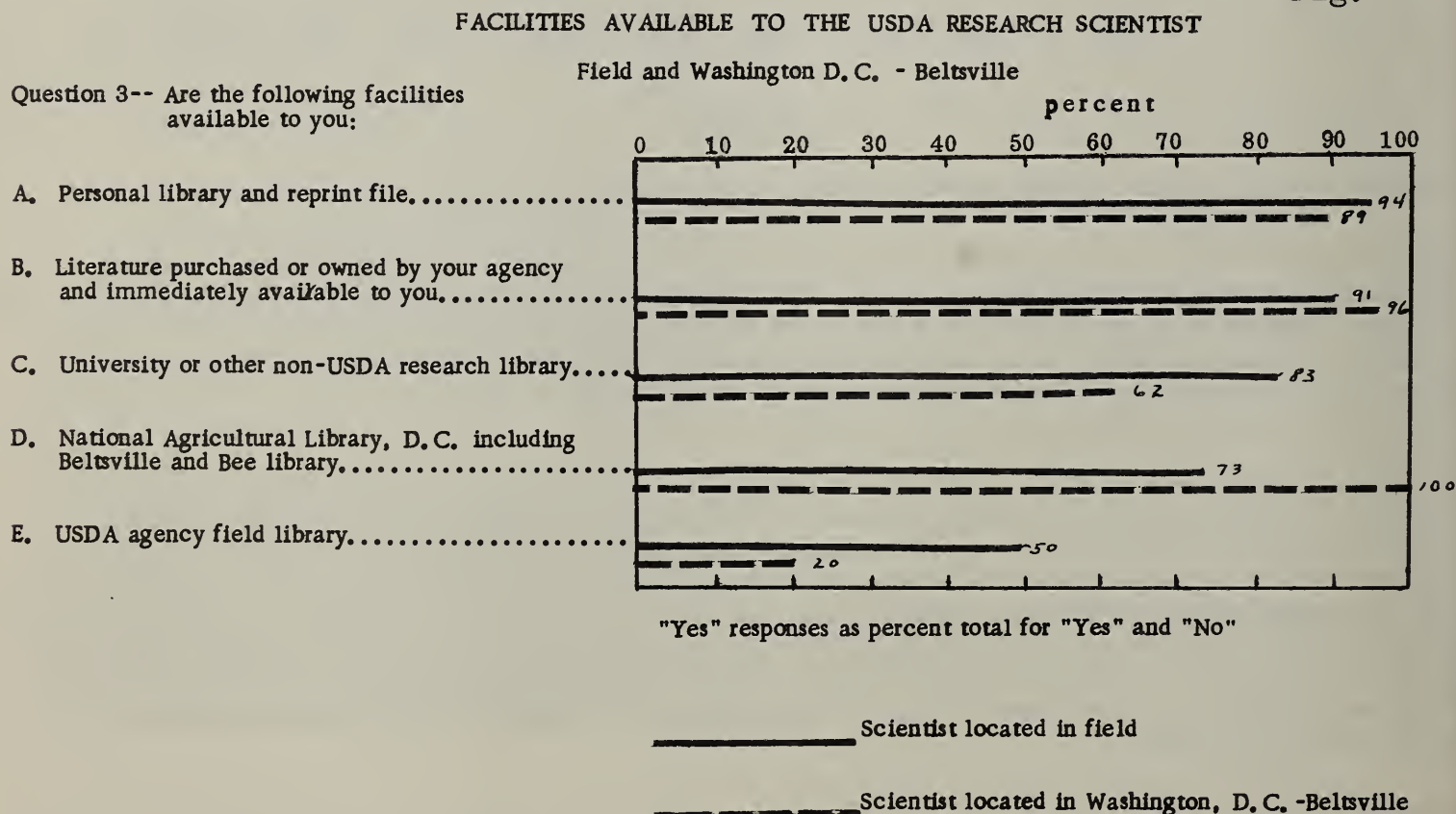
The entomology-nematology discipline group 2, and the forestry discipline group 5, accounted for about half of the field workers that reported no University or other non-USDA research library was available.

Out of the 98 workers (17 percent) required to seek facilities outside of their local area there were 29 scientists who reported that only the National Agricultural Library facilities were available to them for information needed in their research programs. There were 12 who reported only the agency field library was available, and 22 who reported none of the 3 types of library facilities were available to them. In this group there were some who had local nontechnical libraries in the area, but this facility did not meet the researchers needs.

It is noteworthy that 62 percent of the scientists in the D.C. -Beltsville area report that they make use of other than USDA research Library. The libraries cited in this category included the Library of Congress, Naval Medical Research Center, National Institute of Health Medical Library, Bureau of Public Roads Library, U.S. Geological Survey Library, Smithsonian Entomology Library, John Hopkins University and various private research libraries. Since all of these sources are available to the Department scientists either directly or through the National Agricultural Library system, the responses of less than 100 percent must be interpreted as measuring awareness, demand, or usage, rather than availability of the facility.

D. National Agricultural Library, Washington, D.C. (including the Beltsville and Bee Culture libraries): All of the scientists in the sample located in the D.C. -Beltsville area realize that the National Agricultural Library (NAL) is available to them. However 27 percent of the scientists in the field who responded to the question said "no" the NAL facility was not available to them. Since the facilities of this library are available to all of the scientists in the Department regardless of location, the "no" answer must be interpreted either as a problem of awareness, or a different interpretation of the word "available" in the question. A "no" response in some cases meant the facility was not needed. A field scientists who is served well by a University Library may be unaware or unconcerned with the NAL system. Or a scientist who uses one of the regional field libraries may place the responsibility for obtaining the material with the field library, therefore he is not informed as to what the various avenues for procuring material are open to him. The nonresponse rate of 8 percent for the field respondent may also reflect unawareness.

Fig. S 1





E. USDA Agency field libraries: The field libraries in this category were not listed on the questionnaire. The Agricultural Research Service maintains six field libraries 1/ and the Forest Service maintains eight field libraries 2/. These agency-administered libraries serve field locations where concentration of work and reserved staff warrants on-site library facilities.

The meaning of USDA agency field library should have been made clearer. There were 89 percent of the respondents from the Field who answered the question and half of these marked yes that such facilities are available. It is doubtful that the 14 field libraries serve 50 percent of the Field research scientists.

## LIBRARY SERVICES

Question 4 - Libraries offer a variety of services. Listed below are the services which agricultural research scientists might need from a library. If there is a library close to where you work please first indicate whether the listed services are or are not available at that library, and second, comment on these services. We are eager to receive your comments, and they might include remarks on any aspect of each service whether available to you or not.

Interpretation of the question: The answers to the 14 services listed in question 4 varied depending on the interpretation the respondents placed on various words in the question. It was evident from the comments listed for each service that the availability of the various services checked by one respondent did not always relate to a single library, but to whether the service was available considering several sources. For example one report showed "yes" for micro form and related the service to orders through the National Agricultural Library, but a "yes" for lending was related to a local nonresearch library. As pointed out in the Facilities Section, one respondent considered a library a few miles away was not close while another considered a library 400 miles away was close, and he answered the services question for such a facility. "Availability" meant different things to the scientists. Some of the "yes" answers reflected awareness that the service was available, or need for the service. On the other hand a "yes" that the service was available does not measure how well such a service met a particular need. However, the respondent was invited to comment on such service. The comments that were in the form of a rating such as poor, slow, or excellent were tabulated and a summary of these comments follows the statistical summary at the end of the discussion of each of the 14 services. The comments are probably the most useful part of this question.

Response Rate: All of the Washington, D. C. -Beltsville respondents answered some part of the question. There were 22 field respondents who did not answer any part of question 4. The 16 field workers who reported no for all 14 services were eliminated from the summary. It is likely that these 38 field respondents (7 percent) considered that they had no library close to the place of work.

The response rate for each of the 14 services listed, ranged from highs of 99 percent for D. C. -Beltsville and 92 percent for the field, to lows of 58 percent for D. C. -Beltsville and 78 percent for the field. In 6 out of the 14 categories of service the response rate from the D. C. -Beltsville area was substantially lower than that from the Field. These categories were: compiling special bibliographies, reproductions in micro form, reproductions of tables of contents, printed library catalog, abstracting, and translating. In the D. C. -Beltsville area where access to practically complete library service is easier, a scientist may not have had to try some of the sources listed, therefore a nonresponse may be interpreted as a "don't know". A review of the questionnaire shows that for both areas there are many reports of "don't know" entered in the comments when the "yes" or "no" cell was left blank. Since the list of services is vast it is expected that some of the services have not been required by the scientist; consequently, he may not know if a service is available. This is true regardless of what facilities may be available locally.

The grade group of the respondent did not make any significant difference in the answers to the questions on Library services available.

The following discussion for each library service listed includes a statistical summary by areas, and the summary of the comments following each section. See Fig. S2.

### A. Lending Books:

Scientists in the D. C. -Beltsville area may borrow books needed in their research from nearby libraries. There were 95 (52 percent of those reporting on "A") who entered a comment. The comments of 49 rated the service from adequate to excellent, while 16 rated it below with slowness the principle complaint. Availability or access seemed to be a problem to 13 although this includes 4 who remarked that there was no library close. Since a book can be ordered from the South Building location, by telephone, the problem of Beltsville not being close enough should probably be related to a search service rather than to lending. There were 6 who were critical of the collection and 8 who found the problem to be one of service in connection with withdrawing the book.

There were 94 percent of the field scientists who stated they are able to borrow books from libraries close to their laboratories. About a third or 209 entered a comment. Comments rating adequate to excellent were by 106, while 33 rated the service below, mostly poor. The leading problem cited by 34 was Accessibility -- that is no library close; while 32 found the collection a problem -- it is limited or a specific subject field is lacking.

1/ Located at Wyndmoor, Pa.; Ames, Iowa; Plum Island at Long Island, New York; Peoria, Ill.; New Orleans, La.; Albany, Calif.

2/ Located at Madison, Wisc.; Ogden, Utah; Portland, Oregon; Berkeley, Calif.; Atlanta, Ga.; New Orleans, La.; Asheville, N. C.; and Upper Darby, Pa.

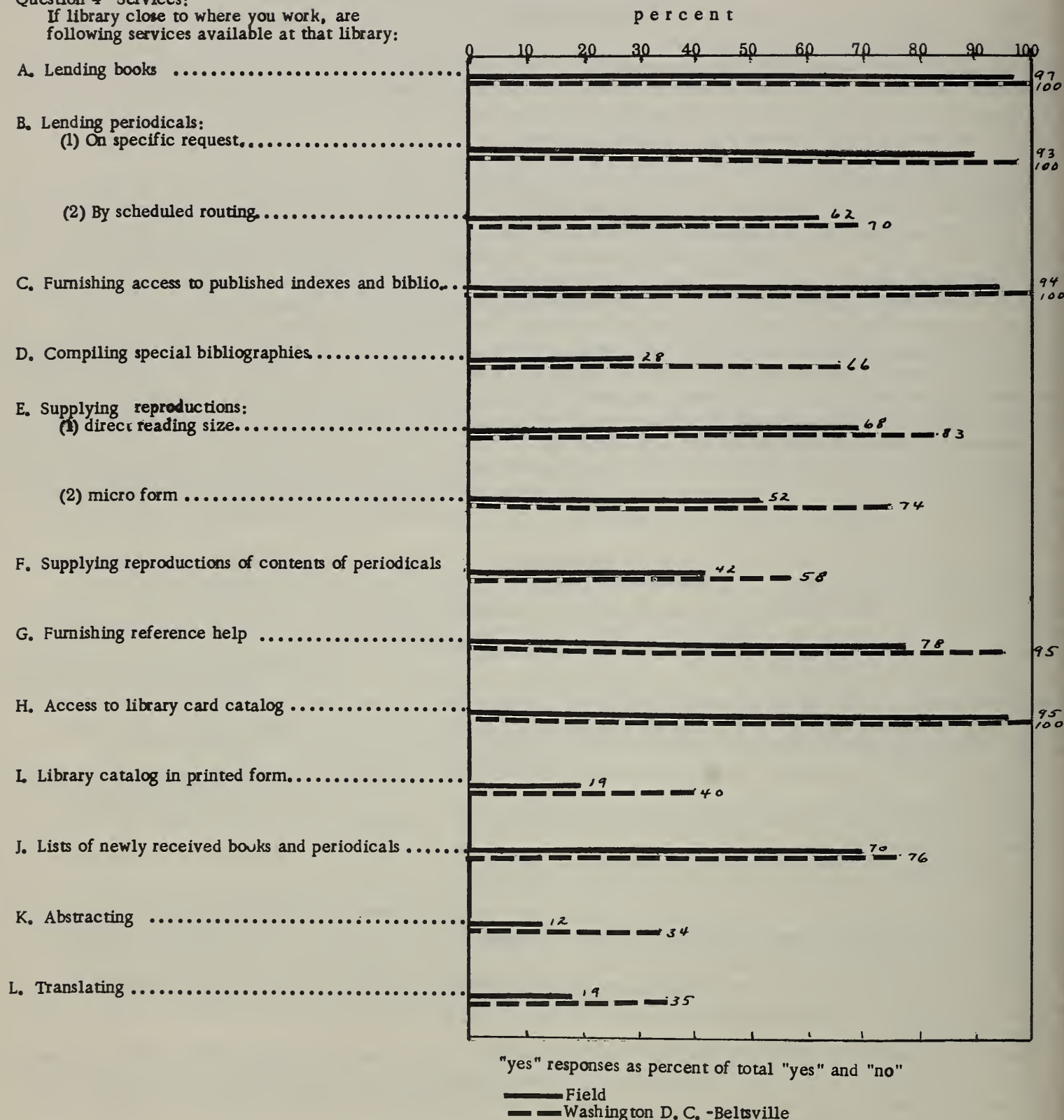


LIBRARY SERVICES AVAILABLE  
CLOSE TO WHERE USDA RESEARCH SCIENTIST WORKS

Field and Washington D.C. -Beltsville

Question 4- Services:

If library close to where you work, are  
following services available at that library:



		Number of Responses		
		D. C. &		
		Field	Belts.	Total
4A. Lending Books:				
Service is available	- Yes	522	180	702
		( 97 o/o)	(100 o/o)	( 98 o/o)
	No	17	0	34
		( 3 o/o)	( 0 o/o)	( 2 o/o)
	Total	<u>539</u>	<u>180</u>	<u>736</u>
	Response Rate	( 92 o/o)	( 99o/o)	( 94 o/o)
Comments: Ratings	- Excellent	27	20	47
	Efficient	-	2	2
	Cooperative	-	1	1
	Good	60	25	85
	Adequate	19	1	20
		<u>106</u>	<u>49</u>	<u>155</u>
	Slow	7	10	17
	Poor	26	3	29
	Limited	-	3	3
	TOTAL	<u>139</u>	<u>65</u>	<u>204</u>
Other comments (Arbitrary classification of Comments)				
(1) Availability of or access to material:				
	Only half of books wanted are available	-	1	1
	Many must be borrowed from other libraries	-	3	3
	No copy of book available for immediate use	-	3	3
	One copy should always be on hand	-	2	2
	No library close	34	4	38
	Only one copy of book; time period too short; copies usually charged out; not immediately renewable	4	-	4
	TOTAL	<u>38</u>	<u>13</u>	<u>51</u>
(2) Collection:				
	Not enough new books	-	2	2
	Limited collection	20	-	20
	Limited on technical books	-	2	2
	Needed subject matter lacking	12	-	12
	Number of subjects limited	-	2	2
		<u>32</u>	<u>6</u>	<u>38</u>
(3) Education (Information as to services available)				
	Needs information on services of NAL	-	<u>1</u>	<u>1</u>
(4) Physical Plant				
	NAL lacks space for adequate storage material	-	<u>1</u>	<u>1</u>
(5) Service:				
	Need to go to stacks and find yourself if urgent	-	2	2
	Can't locate misplaced books	-	3	3
	Not on shelf search takes weeks	-	1	1
	Interlibrary loans slow	-	1	1
	Need of adequate staff to improve poor circulation service	-	<u>1</u>	<u>1</u>
			8	8
(6) Suggested new services-need list of new accessions		-	-	1
	Number commenting - Grand Total	<u>209</u>	<u>95</u>	<u>304</u>
Commenting as percent of response to question 4A		( 36 o/o)	( 52 o/o)	( 40 o/o)

#### 4B. Lending Periodicals:

A pair of questions on the availability of the service of lending was asked: (1) On Specific Request and (2) By Scheduled Routing. There were 93 percent of the Field Scientists reporting who said "yes, periodicals could be borrowed on specific request. Comments were frequent that faculty library privileges were extended to Department Research Scientists located at or near University libraries and these included the loan of periodicals. However, 9 commented that the periodicals could be used in the library only, while 14 cited the limited number as a problem. Of the comments from field scientists that could be used in a rating system, 3/4 rated lending on specific request as adequate, good, or excellent, while the other 1/4 rated it as inadequate, limited, poor, or slow. In the D.C. -Beltsville area where the service is available to all, the comments of 43 out of 50 were in the adequate to excellent class.

Lending periodicals by scheduled routing was shown available by 62 percent of the Field workers reporting on this question and by 70 percent of the D.C. -Beltsville workers.

#### 4B. (1) Lending Periodicals on Specific Request

About 1/4 of the scientists added comments on Part (1); 52 from D.C. -Beltsville and 150 from the field. These comments are summarized below.

		Number of Responses		
		D.C. &		
		Field	Belts.	Total
Service is available -	Yes	493 (90 o/o)	177 (98 o/o)	670 (92 o/o)
	No	54 (10 o/o)	4 ( 2 o/o)	58 ( 8 o/o)
	Total	<u>547</u>	<u>181</u>	<u>728</u>
	Response Rate	<u>(94 o/o)</u>	<u>(100 o/o)</u>	<u>(95 o/o)</u>
Ratings -	Excellent	23	18	41
	Good	48	18	66
	Adequate	<u>24</u>	<u>7</u>	<u>31</u>
		95	43	138
	Slow	3	3	6
	Poor	3	1	4
	Limited	14		14
	Inadequate	<u>7</u>	<u>3</u>	<u>10</u>
		122	50	172
Other Comments -	Availability of Materials			
	Not available locally	5		5
	Can be used in library only	9		9
	Limited number available	<u>14</u>		<u>14</u>
		28		28
	Service			
	Interlibrary loan is slow		2	2
	Number commenting - GRAND TOTAL	<u>150</u>	<u>52</u>	<u>202</u>

#### 4B. (2) Lending Periodicals by Scheduled Routing

Comments on Part (2) were made by 107 scientists from the field and 50 from D.C. -Beltsville. About one half of those commenting feel that the routing service is adequate or better than adequate. Slow and limited were the main problems cited and these are the disadvantages of most routing systems. Comments are summarized below.

		Number of Responses		
		D.C. &		
		Field	Belts.	Total
Service is available -	Yes	307 (60 o/o)	118 (70 o/o)	425 (63 o/o)
	No	201 (40 o/o)	51 (30 o/o)	252 (37 o/o)
	Total	<u>508</u>	<u>169</u>	<u>677</u>
	Response Rate	<u>(84 o/o)</u>	<u>(93 o/o)</u>	<u>(86 o/o)</u>

(Cont'd. next page)



		Number of Responses		
		D. C. &		
Ratings -		Field	Belts.	Total
	Excellent	15	6	21
	Good	31	12	43
	Adequate	13	1	14
		<u>59</u>	<u>19</u>	<u>78</u>
	Slow	19	12	31
	Poor	5		5
	Limited	19	10	29
	Inadequate	5	8	13
	Irregular		1	1
	GRAND TOTAL	<u>107</u>	<u>50</u>	<u>157</u>

#### 4C. Furnishing access to published indexes and bibliographies:

Approximately 92 percent of responding field scientists have access to published indexes and bibliographies through libraries. As might be expected D. C. -Beltsville scientists have ready access to these reference works.

Comments on this question were made by 100 scientists and those comments are summarized below. Judging from the nature of the remarks, however, 43 percent of those who commented are not satisfied with the bibliographic services available.

		Number of Responses		
		D. C. &		
Service is available -		Field	Belts.	Total
	Yes	500 (94 o/o)	167 (100 o/o)	667 (96 o/o)
	No	30 ( 6 o/o)	- ( 0 o/o)	30 ( 4 o/o)
	Total	<u>530</u>	<u>167</u>	<u>697</u>
	Response Rate	<u>(91 o/o)</u>	<u>(92 o/o)</u>	<u>(91 o/o)</u>
Ratings -	Excellent	10	6	16
	Good	10	9	19
	Adequate	19	3	22
		<u>39</u>	<u>18</u>	<u>57</u>
	Limited	16	-	16
	Bibliography of Agriculture only	1	-	1
		<u>56</u>	<u>18</u>	<u>74</u>
Other Comments:	Availability of material (Inconvenient to use)			
	Reference room too crowded	-	2	2
	Material not promptly reshelfed	-	1	1
	Help needed	-	2	2
	Library too far from labs or work location	5	5	10
	Must use in library only	4	-	4
	Some are circulated	4	-	4
	Old issues are discarded	2	-	2
	If requested	1	-	1
		<u>16</u>	<u>10</u>	<u>26</u>
	GRAND TOTAL	<u>72</u>	<u>28</u>	<u>100</u>

#### 4D. Compiling special bibliographies

The rate of response to this question from field scientists was much higher (83 percent) than the rate from D. C. -Beltsville scientists (67 percent). It is significant that only 27 percent of the responding field scientists stated that "yes" special bibliographies are compiled for them, furthermore, limited service was a criticism reported in 9 out of 34 comments. About 1/3 of the field scientists who commented rated the services satisfactory or better. Service is believed to be better for D. C. -Beltsville scientists as 65 percent of those who responded indicated "yes", compilation of special bibliographies is done for them, and 2/3 who commented rated the service satisfactory or better.

## 4D. Compiling Special Bibliographies:

		Number of Responses		
		D. C. &		
		Field	Pelts.	Total
Service is available -	Yes	133 (28 o/o)	80 (66 o/o)	213 (34 o/o)
	No	349 (72 o/o)	42 (34 o/o)	391 (66 o/o)
	Total	<u>482</u>	<u>122</u>	<u>604</u>
	Response Rate	<u>(83 o/o)</u>	<u>(67 o/o)</u>	<u>(97 o/o)</u>
Ratings -	Excellent	1	3	4
	Very good	-	1	1
	Good	3	3	6
	Adequate	6	-	6
	Helpful	2	3	5
	Satisfactory	-	4	4
		<u>12</u>	<u>14</u>	<u>26</u>
Comments -	Available on a fee basis	1	-	1
	Slow	-	2	2
	Available from NAL	2	-	2
	Available upon request	5	-	5
	Limited	9	-	9
	Inadequate	3	2	5
	Needs updating	-	2	2
	Rarely feasible	2	-	2
Other Comments -	Collection - inadequate for compiling	-	1	1
	GRAND TOTAL	<u>34</u>	<u>21</u>	<u>55</u>

## 4E. Supplying reproductions to public

The scientists were asked to indicate whether photographic reproductions of publications were available to them through libraries close to where they work, in either of two forms, (1) direct reading size or (2) microform.

## (1) Direct reading size

The rate of response to this question was good -- 88 percent of the field scientists and 80 percent of the D.C.-Beltsville scientists responded. Approximately 66 percent of the responding field scientists indicated that page-size reproductions of needed publications are furnished through libraries. A much larger percentage (83 percent) of the scientists in the D.C.-Beltsville area report "yes" that photographic copies of literature in easily readable form are supplied by libraries. The "no" reports by 17 pct. shows that some scientists do not know that the library does supply this service although a charge is made. Checking into some reports of "no" by Beltsville-D.C. scientists, it was found that one "didn't know"; one said "it was not available at Beltsville"; one said "not wanted"; and one said "I need the service". These no's show a problem of awareness or no requirements for the service. The "don't knows" also fall into the no requirement category otherwise the scientists would have found out that the library does supply reproductions.

Comments were supplied on this service by 68 respondents, 29 from D.C.-Beltsville and 39 from the field. Of those scientists who commented, 46 percent stated that this service was slow or was available only on a fee basis. The comments are summarized below:

below:		Number of Responses		
		D. C. &		
(1) Direct Reading Size		Field	Belts.	Total
Service is available -	Yes	336 (68 o/o)	119 (83 o/o)	455 (71 o/o)
	No	162 (32 o/o)	24 (17 o/o)	186 (29 o/o)
	Total	<u>498</u>	<u>143</u>	<u>641</u>
	Response Rate	<u>(85 o/o)</u>	<u>(79 o/o)</u>	<u>(84 o/o)</u>
Comments - Ratings -	Excellent	7	4	11
	Good	12	4	16
	Helpful	1	-	1
	Adequate	-	9	9
		<u>20</u>	<u>17</u>	<u>37</u>
	Slow	2	3	5
	Available for a fee	17	9	26
	TOTAL	<u>39</u>	<u>29</u>	<u>68</u>

#### 4E. (2) Microform

The rate of response, to this part of the question on availability of services on duplicating reference materials, was lower than the first half of the question. 81 percent of field scientists and 67 percent of D.C. -Beltsville scientists responded. Of field scientists who reported, 49 percent stated "no" that microfilm was not available to them while only 26 percent of the D.C. -Beltsville scientists reported "no".

Since reproductions may be obtained from the Department Library, a response of "no" reflects either unawareness that such a service is available, or that the copy charge in effect makes it unavailable.

		Number of Responses		
		Field	D. C. & Belts.	Total
(2) Microform	Service is available - Yes	240 (52 o/o)	90 (74 o/o)	330 (57 o/o)
	No	217 (48 o/o)	31 (26 o/o)	248 (43 o/o)
	Total	<u>457</u>	<u>121</u>	<u>578</u>
	Response Rate	<u>(78 o/o)</u>	<u>(67 o/o)</u>	<u>(76 o/o)</u>
Comments:				
Ratings -	Excellent	-	3	3
	Good	4	3	7
	Adequate (Satisfactory)	4	4	8
		<u>8</u>	<u>10</u>	<u>18</u>
	Slow	1	3	4
	Limited	6	-	6
	Available for a fee	15	8	23
	No Viewer	-	1	1
	TOTAL	<u>30</u>	<u>22</u>	<u>52</u>
	GRAND TOTAL	<u>51</u>	<u>69</u>	<u>120</u>
E (1) & (2)				

#### 4F. Supplying reproductions of tables of contents of periodicals

Rapid duplication and distribution of tables of contents from pertinent periodicals would be one source for keeping currently aware of progress in the scientists' areas of interest. Therefore, the scientists were asked to state whether they receive reproductions of tables of contents. There were 87 percent of field scientists and 64 percent of D.C. -Beltsville scientists who responded to the question. Of field scientists who responded, 41 percent stated that they receive this service. A somewhat higher percentage (57 percent) of D.C. -Beltsville scientists receive this service.

The importance attached to copies of table of contents for current awareness is emphasized in the responses to question 5, which asks for means by which the library could keep "you" informed on the contents of journals in the scientists' field of interest. Out of 603 comments received in response to the question, the leading one (170 responses) was to circulate table of contents and abstracting services. Detailed comments by respondents shown for question 5 reveal the scientists' demand for this service.

Two published title services "Chemical Titles" and "Current Contents" rated 5th and 7th respectively in response to question 23, which asked for tools of equal or greater value to research scientists than the Bibliography of Agriculture, or Biological Abstracts.

		Number of Responses		
		Field	D. C. & Belts.	Total
Service is available -	Yes	205 (42 o/o)	66 (56 o/o)	271 (45 o/o)
	No	279 (58 o/o)	48 (42 o/o)	327 (55 o/o)
	Total	<u>484</u>	<u>114</u>	<u>598</u>
	Response Rate	<u>(83 o/o)</u>	<u>(63 o/o)</u>	<u>(78 o/o)</u>
Ratings -	Excellent	3	3	6
	Good	7	1	8
	Adequate (Satisfactory)	-	3	3
		<u>10</u>	<u>7</u>	<u>17</u>
	Slow	-	1	1
	By request only	12	6	18
	Available for a fee	4	3	7
	GRAND TOTAL	<u>26</u>	<u>17</u>	<u>43</u>



#### 4G. Furnishing reference help

Help in obtaining references is available to D.C. -Beltsville scientists. There were 28 out of 35 who commented that this service is adequate or better. There were 22 percent of the scientists in the field who reported that this service was not available. The comments from both areas point up the problem with 19 out of 43 rating this service as limited with 14 rating it very good or excellent.

		Number of Responses		
			D. C. &	
		Field	Belts.	Total
Service is available -	Yes	398 (78 o/o)	157 (95 o/o)	555 (82 o/o)
	No	113 (22 o/o)	8 ( 3 o/o)	121 (18 o/o)
	Total	<u>511</u>	<u>165</u>	<u>676</u>
	Response Rate	<u>(88 o/o)</u>	<u>(91 o/o)</u>	<u>( 88 o/o)</u>
Comments: Ratings -	Excellent	4	15	19
	Very Good	10	---	10
	Good	---	9	9
	Adequate (satisfactory)	<u>9</u>	<u>4</u>	<u>13</u>
		23	28	51
	Fair	---	4	4
	Poor	1	---	1
	Limited	19	1	20
	Other Comments:			
	Physical Plant - More space in reading room needed	---	2	2
GRAND TOTAL		<u>43</u>	<u>35</u>	<u>78</u>

#### 4H. Furnishing access to library catalog

Accessible library card catalogs are reported by all, but 5 percent of field scientists responding to this service.

		Number of Responses		
			D. C. &	
		Field	Belts.	Total
Service is available -	Yes	497 (95 o/o)	173 (100 o/o)	670 (94 o/o)
	No	26 ( 5 o/o)	0 ( 0 o/o)	26 ( 6 o/o)
	Total	<u>523</u>	<u>173</u>	<u>696</u>
	Response Rate	<u>(90 o/o)</u>	<u>(100 o/o)</u>	<u>(91 o/o)</u>
Comments: Ratings -	Excellent	4	3	7
	Very Good	3	---	3
	Good	7	5	12
	Adequate	<u>16</u>	<u>6</u>	<u>22</u>
		30	14	44
	Poor (poor catalog)	---	1	1
	Limited	7	4	11
	Too distant from lab.	<u>2</u>	<u>1</u>	<u>3</u>
	GRAND TOTAL	<u>39</u>	<u>20</u>	<u>59</u>

#### 4I. Furnishing library catalog in printed form

The rate of response to this question, from both field and D.C. -Beltsville scientists was lower than all, but one of the other questions in this series. There was, however, a significantly higher response from field (83 percent) than from D.C.-Beltsville (60 percent) scientists. It is possible that relative unfamiliarity with this type of service resulted in uncertainty as to the meaning of the question, or that description "library catalog in printed form" was not associated with the two major publications the National Union Catalog or Catalog of the Library of Congress. Of the field scientists who responded, only 18 percent stated that printed library catalogs are available to them. About 40 percent of D.C. -Beltsville scientists who responded indicated that this service is available. For the combined areas library catalogs in printed form are reported available by 22 percent of USDA scientists.

A few responding scientists made comments on this service and the remarks are analyzed on the next page.

#### 4I. Furnishing Library Catalog in Printed Form

		Number of Responses		
		Field	D. C. -Belts.	Total
Service is available -	Yes	87 (19 o/o)	43 (40 o/o)	130 (23 o/o)
	No	382 (81 o/o)	64 (60 o/o)	446 (77 o/o)
	Total	<u>469</u>	<u>107</u>	<u>576</u>
	Response Rate	<u>(80 o/o)</u>	<u>(59 o/o)</u>	<u>(75 o/o)</u>
Comments: Ratings -	Excellent	---	1	1
	Good	---	5	5
	Adequate	7	6	13
	Limited	---	2	2
	Very poor	---	1	1
	GRAND TOTAL	<u>7</u>	<u>15</u>	<u>22</u>

#### 4J. Furnishing List of Newly Received Books and Periodicals

There were 70 percent of the responding field scientists who indicated that this service was available to them and 76 percent of the D. C. -Beltsville scientists so indicated. About half of the 32 workers who commented rated this service less than adequate.

		Number of Responses		
		Field	D. C. & Belts.	Total
Service is available -	Yes	361 (70 o/o)	113 (76 o/o)	474 (71 o/o)
	No	155 (30 o/o)	35 (24 o/o)	190 (29 o/o)
	Total	<u>516</u>	<u>148</u>	<u>664</u>
	Response Rate	<u>(88 o/o)</u>	<u>(82 o/o)</u>	<u>(87 o/o)</u>
Comments: Ratings -	Excellent	4	2	6
	Good	5	3	8
	Adequate	---	4	4
		<u>9</u>	<u>9</u>	<u>18</u>
	Limited [new bookshelf only source (4)]	---	6	6
	[partial list only (5)]	5	---	5
	Difficult	3	---	3
	GRAND TOTAL	<u>17</u>	<u>15</u>	<u>32</u>

#### 4K. Abstracting

There were 83 percent field scientists and 62 percent D. C. -Beltsville scientists who responded to a question on the availability of abstracting services in libraries readily accessible to them. Of the scientists who responded, 12 percent from the field indicated that this service is available and 34 percent from the D. C. -Beltsville so indicated. Of all scientists responding, only 16 percent state that abstracting services are available.

A very few comments (15) were made by responding scientists and they are analyzed below.

		Number of Responses		
		Field	D. C. & Belts.	Total
Service is available -	Yes	59 (12 o/o)	38 (34 o/o)	97 (16 o/o)
	No	427 (88 o/o)	74 (66 o/o)	501 (84 o/o)
	Total	<u>486</u>	<u>112</u>	<u>598</u>
	Response Rate	<u>(83 o/o)</u>	<u>(62 o/o)</u>	<u>(78 o/o)</u>
Comments: Ratings -	Adequate	---	3	3
	Good	1	3	4
	Limited	4	3	7
	Inadequate	---	1	1
	Poor	---	1	1
	Can be arranged for	2	---	2
	GRAND TOTAL	<u>7</u>	<u>8</u>	<u>15</u>

#### 4L. Translating

A question on the availability of translating services elicited an 87 percent response from field scientists and a 58 percent response from D. C. -Beltsville scientists. About 19 percent of field scientists and 34 percent of D. C. -Beltsville scientists indicated that translating services are available to them.

Comments made by 37 scientists are analyzed below.

		Number of Responses		
		Field	D. C. & Belts.	Total
Service is available -	Yes	94 (19 o/o)	36 (35 o/o)	130 (22 o/o)
	No	398 (81 o/o)	68 (65 o/o)	466 (78 o/o)
	Total	<u>492</u>	<u>104</u>	<u>596</u>
	Response Rate	<u>(84 o/o)</u>	<u>(58 o/o)</u>	<u>(78 o/o)</u>
Comments: Ratings -	Good	1	---	1
	Adequate	---	3	3
	On Request (can be arranged for)	15	---	15
	For a Fee	3	---	3
	Poor	---	1	1
	Limited	6	4	10
	Unsatisfactory	4	---	4
	GRAND TOTAL	<u>29</u>	<u>8</u>	<u>37</u>

Question 5 - Most research workers subscribe to one or more periodicals that contain papers in their fields of interest. Agencies of the U. S. Department of Agriculture may pay for subscriptions to other necessary periodicals. Now, assuming that the National Agricultural Library receives those journals which you or your agency do not buy, what do you think are practical means by which the library could keep you informed on the contents (i. e., data, subject matter, substance, etc.) of those journals?

Comments received in response to question 5 are summarized according to broad classifications in the table, and reproduced later on in this report. 'See the Table of Contents for the page number.

	Number of Respondents	Percent of Number with Positive Suggestions	Percent of Total Number Commenting	Percent of Total Respondents
Comments with Positive Suggestions:				
1. Circulate Table of Contents (Including Item 3)	170 (202)	33 (39)		
2. Provide Abstracts (Including Item 3)	122 (154)	23 (29)		
3. Provide Table of Contents and Abstract (Not included in 1 or 2)	32	6		
4. Selective Dissemination of Information (Provide aid according to readers' interest)	58	11		
5. Periodicals should be routed	50	10		
6. Information as to Service available	19	4		
7. Special bibliographies	17	3		
8. Supply Reproduction of Journal articles	16	3		
10. Other Suggestions	38	7		
Sub-total	<u>522</u>	<u>100</u>	<u>87</u>	<u>68</u>
Comments that present Service is satisfactory:				
9. Responsibility of Research Worker	8			
11. Satisfied with present service	73			
Sub-total	<u>81</u>		<u>13</u>	<u>11</u>
Total commenting	603		<u>100</u>	79
Respondents not commenting	161			21
Total Respondents	<u>764</u>			<u>100</u>



Question 5 - Cont'd. - Suggested ways of informing scientists about journal articles pertinent to research.

Judging from specific comments that were received on this question there is little purpose in attempting to analyze the data by comparing answers from junior and senior scientists or comparing those from field scientists with those from D.C. -Beltsville scientists.

This is probably the most important question asked the scientists, for from the answers it is clear that the vast majority of scientists feel the need for means by which they can be more promptly advised of significant results in research by other workers. Out of a total of 764 questionnaires received, there were 603 scientists who commented on this question -- a response rate of 79 percent. Of those who commented, 13 percent indicated that they believe the means already available through current bibliographies are adequate and that the cost of improving current methods would not be justified, or that the literature search is the responsibility of the working scientists. Positive suggestions for informing scientists about the content of journals in their field of interest were made by 522 respondents or 87 percent of those who commented.

Circulate the table of contents of journals was suggested by the 33 percent of the scientists who made suggestions for improvements. Next in importance was the request the abstracts be provided, which made up 23 percent of the improvement suggestions. Another 6 percent suggested that both abstracts and copies of tables of content would be helpful.

Existing systems through which periodicals are routed to scientists leaves something to be desired was expressed by 10 percent (50) of those who made positive suggestions. It is evident from the comments that some of the researchers do not know that some routing service is available. However, in some field locations, routing is not available from the Agency nor from the field or local library.

#### SEARCH TOOLS

See Fig. S3

#### AGENCY BIBLIOGRAPHY OR CARD CATALOG

Question 6 - Do you or does your agency make an effort to maintain a special bibliography or card catalog or a similar aid to keep you informed in your scientific specialty ?

This question was designed to develop information on the effort being made by research agencies to supply their scientists with a means by which they can be kept aware of progress in pertinent areas of science. The rate of response to this question was high. There was little difference in the answers from junior scientists compared with those from senior scientists in the field, and the average for all scientists in the field was 68 percent (391 scientists) who indicated that either they or their agencies do provide this service. In contrast, agency bibliographies or special card catalogs were stated to be available by but 57 percent (100) of D.C. - Beltsville scientists. Only 49 percent (29) of the responding junior scientists from D.C. -Beltsville indicated that such a service is available. This is in contrast with the answers by senior scientists in the same area, 61 percent (70) of whom stated that they or their agencies maintain special bibliographies.

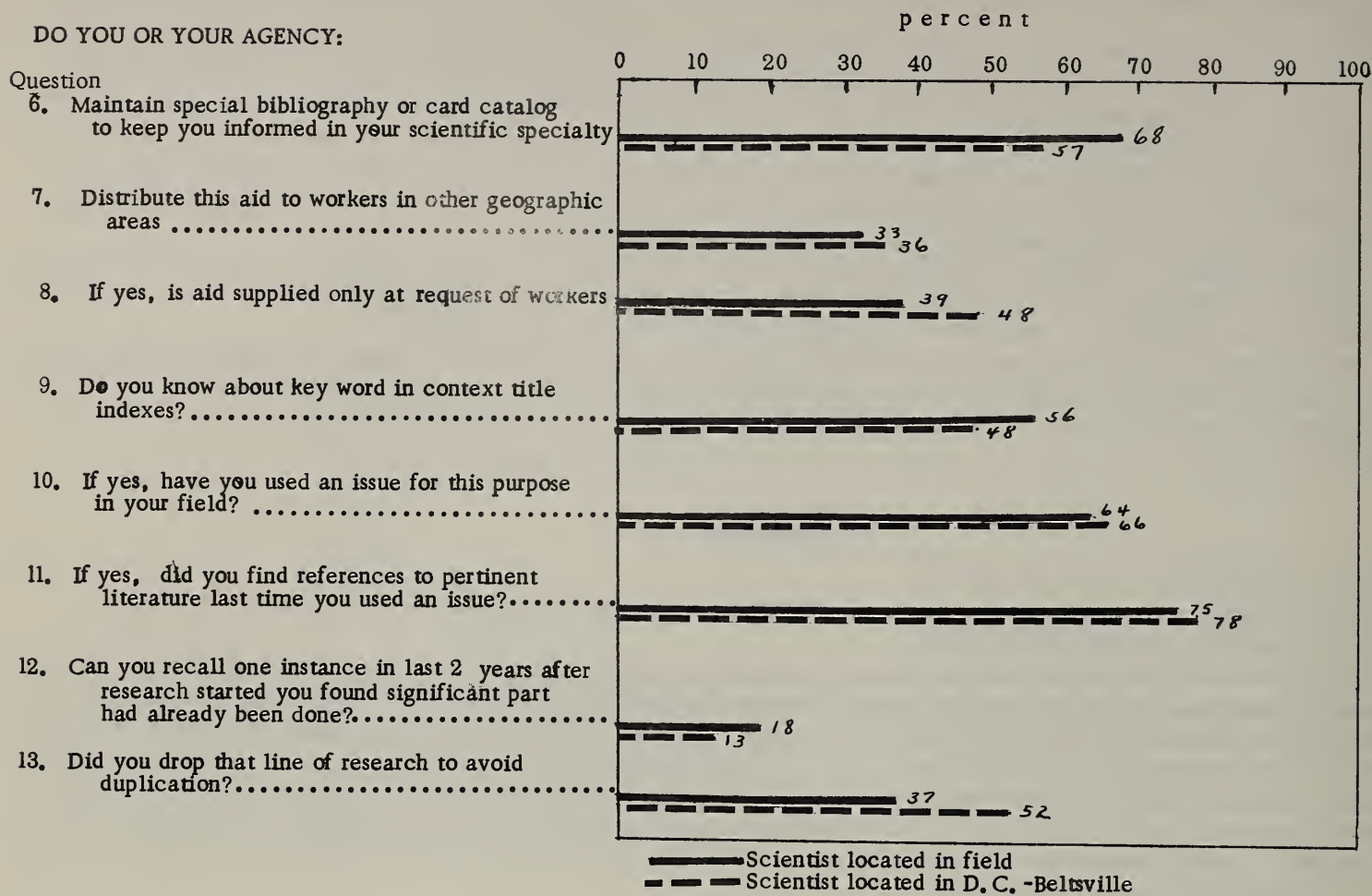
Question 7 - Do you or does your agency distribute this aid to workers at locations in other geographical areas ?

Because this question was dependent on the previous one, only those scientists who answered "yes" to question 6 could be counted in figuring the response rate which was 90 percent for the field and 95 percent for D.C. -Beltsville area. There was little difference between the answers of senior and junior scientists. There is no significant difference between areas as 33 percent of field scientists and 36 percent of D.C. -Beltsville scientists indicated that agency or private bibliographies are made available to workers at other geographical locations.

Question 8 - If yes, is it supplied only at the request of those other workers ?

There were 39 percent of the field scientists and 48 percent of D.C. -Beltsville scientists who indicated that agency bibliographies are supplied only at request of workers at different geographical locations.

		Field Scientists		D.C. -Beltsville	
		Total Response	Yes	Total Response	Yes
6. Do you or does your agency make an effort to maintain a special bibliography or card catalog or a similar aid ?	Number	573	391	176	100
	Percent	100 o/o	68 o/o	100 o/o	57 o/o
	Response Rate	98 o/o		97 o/o	
7. Distribut this aid to workers at locations in other geographical areas ?	Number	351	117	95	34
	Percent	100 o/o	33 o/o	100 o/o	36 o/o
	Reponse Rate	90 o/o		95 o/o	
8a. Is it supplied only at the request of those other workers ?	Number	108	42	33	16
	Percent	100 o/o	39 o/o	100 o/o	48 o/o
	Response Rate	92 o/o		97 o/o	



"yes" responses as percent of total "yes" and "no"

#### PERMUTED TITLE INDEX

Three interrelated questions (9, 10, and 11) were asked the scientists. They represent an attempt to determine the researcher's view on the usefulness of permuted title indexes. Information obtained may be used by the National Agricultural Library as a basis for considering the advisability of issuing this kind of index. The responses to the three questions are shown in the table on the following page.

Question 9 - Do you know about key word in context title indexes such as are now supplied by Biological Abstracts ?

The response rate was high at 96 percent. Of those responding, 56 percent of the field scientists and 48 percent of the D. C. - Beltsville scientists are acquainted with these indexes. However, there were two discipline groups that had a much smaller number that were familiar with the type. In the economist group, only 17 percent said "yes", and in the engineering group only 32 pct. responding "yes". Scientists in these two disciplines do not generally use the Biological Abstracts and this may have influenced their answers.

Question 10 - Have you used an issue to identify literature that would have a likely pertinence to your research ?

Answers were received from almost all of the scientists who answered question 9 to show that they knew about key word in context title indexes. About 2/3 of these scientists had used a key word in context title indexes, with little difference in the percentages from the two areas.

Question 11 - Did you find a reference to any pertinent literature the last time you used an issue ?

Of the scientists who answered "yes" a key word in context index had been used, 3/4 answered that their last use of a title index helped them find a reference to pertinent literature.



	Field Scientists		D. C. -Beltsville	
	Total Response	Yes	Total Response	Yes
9. Do you know about key word in context title indexes such as are now supplied by Biological Abstracts ?				
Number	562	316	174	84
Percent	100 o/o	56 o/o	100 o/o	48 o/o
Response Rate	96 o/o		96 o/o	
10. If yes, have you used an issue to identify literature that would have a likely pertinence to your research ?				
Number	313	202	83	55
Percent	100 o/o	65 o/o	100 o/o	66 o/o
Response Rate	99 o/o		99 o/o	
11. If yes, did you find a reference to any pertinent literature the last time you used an issue ?				
Number	195	147	51	40
Percent	100 o/o	75 o/o	100 o/o	78 o/o
Response Rate	97 o/o		93 o/o	

## RESEARCH DUPLICATION

It has been implied that U.S. Department of Agriculture scientists are not sufficiently aware of research being conducted by other scientists so as to avoid unnecessary duplication of effort. They were, therefore, asked two questions in an attempt to determine if this implication is justified.

Question 12 - Can you recall of one instance in the last two years when, after you had started a piece of research, you discovered that the work or a significant part of it had already been done ?

There was little difference in the answers of junior scientists and senior scientists. Approximately 97 percent of responding field scientists and 94 percent of responding D. C. -Beltsville scientists answered the question. About 18 percent (103) of the field scientists and 13 percent (22) of the D. C. -Beltsville scientists indicated that after they had started a line of research they discovered that a significant parallel study was being conducted by another scientist.

Question 13 - Did you drop that line of research to avoid duplication ?

Approximately 37 percent (37 of field scientists and 52 percent (11) of D. C. -Beltsville scientists, who responded to the question indicated that they did drop the line of research after they found out that work was being done on it by others. Of the 72 researchers who said they did not drop the research, there were 13 who explained why. There were 5 who said the research was modified, the emphasis changed or the direction altered. There were 3 who said there was sufficiently different approach to avoid duplication or supplemental data were needed, while 2 commented that the research was not in this country and that the American specimen (fungi) may behave differently. Another commented that duplication may be good, but another thought the duplication could be avoided in most instances by obtaining faster translation service.

## EVALUATION OF TWO SOURCES -- BIBLIOGRAPHY OF AGRICULTURE AND BIOLOGICAL ABSTRACTS

Two sources through which scientists may gain access to published information were chosen as a basis for a series of questions: the Bibliography of Agriculture and Biological Abstracts. The principal purpose for this series of questions was to determine their relative importance.

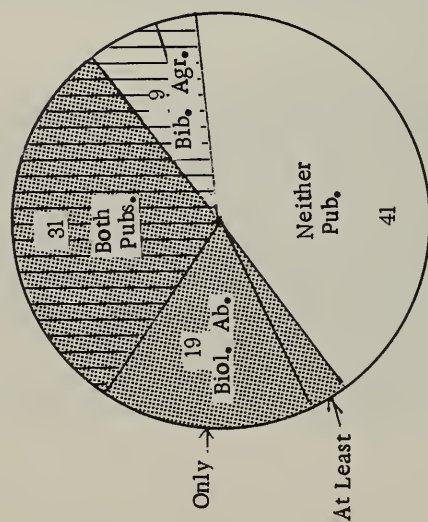
Question 15 - Do you see issues of this publication ?

There were 97 percent of the field scientists and all of the D. C. -Beltsville scientists who answered this question for the Bibliography of Agriculture. The response was almost as high for Biological Abstracts with 96 percent of the field and 94 percent of the scientists in the Capitol Area who answered the question. An analysis was made comparing the responses for the two publications. Six relationships are significant in this comparison. There are the number of scientists who: (1) see both publications, (2) see only the Bibliography of Agriculture, (3) see at least the Bibliography of Agriculture (this group reports yes for the Bibliography, but no response for Biological Abstracts), (4) see only Biological Abstracts, (5) see at least Biological Abstracts (yes for Biological Abstracts but no response for the Bibliography, and (6) see neither publications. The ratio is expressed as a percentage of the 757 respondents who reported on the Bibliography of Agriculture and/or Biological Abstracts. There were 7 respondents omitted, as 5 of these were blanks, and 2 incomplete reports. The same basis was used to compute the percentage for question 17, relating to "Acquainted with the contents". The nonresponse to 17 was low enough so that question 15 and 17 could be meaningfully related.

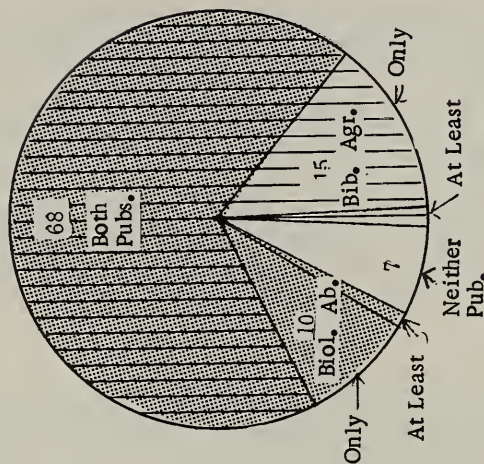


Q.15. DO YOU SEE THIS PUBLICATION?  
Bibliography of Agriculture and/or Biological Abstracts

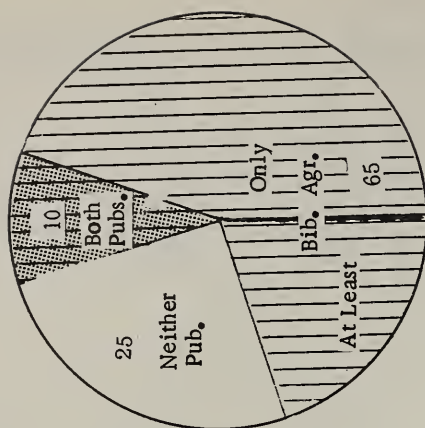
Percentage of Scientists who see both, only one, or neither, by discipline groups



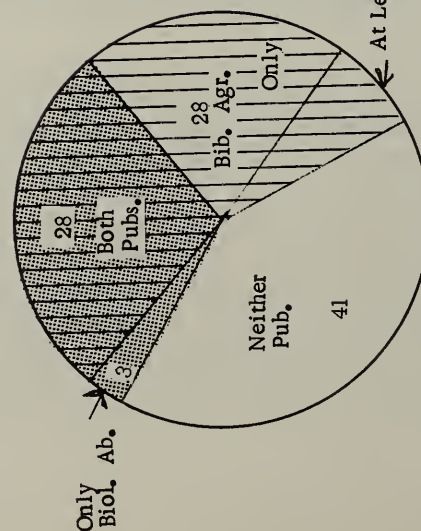
Chemistry, Physics  
(20% of pop.)



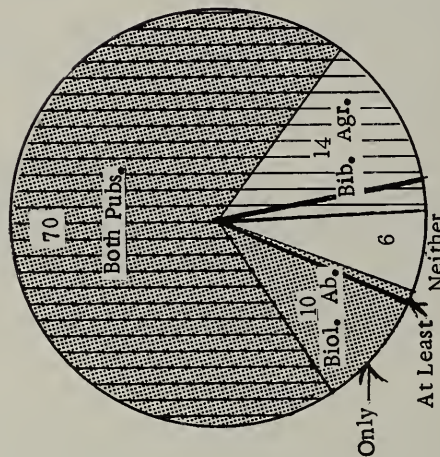
Forestry  
(16% of pop.)



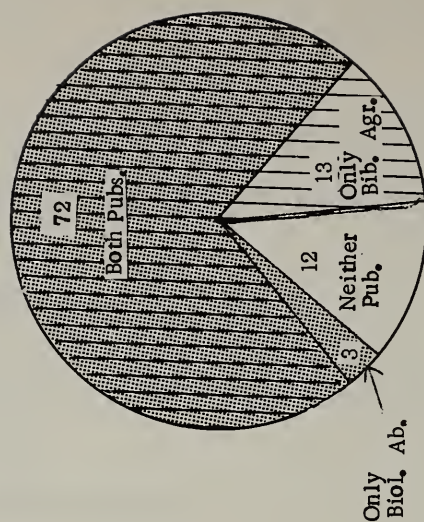
Economics, etc.  
(14% of pop.)



Engineering  
(10% of pop.)



Plant Pathology, Physiology,  
Bacteriology, etc.  
(10% of pop.)

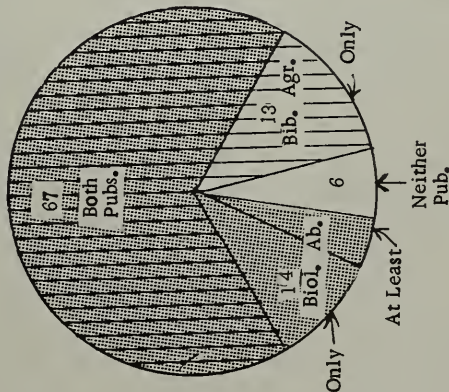


Entomology, Nematology  
(10% of pop.)

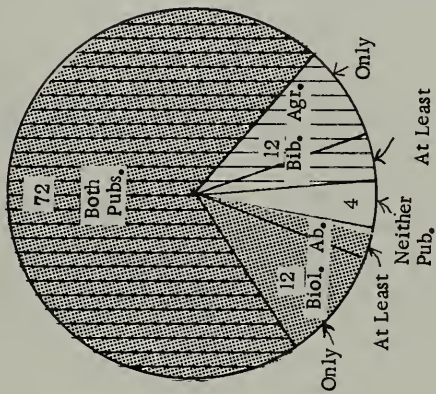
Q.15. DO YOU SEE THIS PUBLICATION?  
Bibliography of Agriculture and/or Biological Abstracts

Fig. S 4  
(cont.)

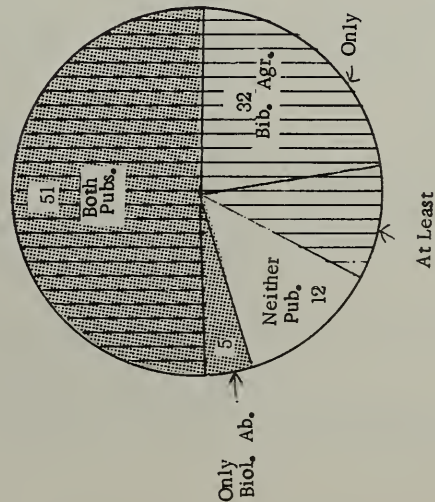
Percentage of Scientists who see both, only one, or neither, by discipline groups



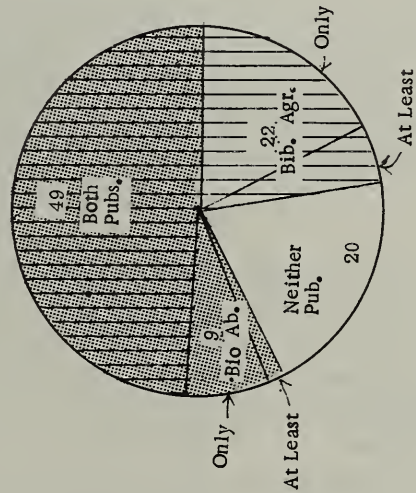
Agronomy, Horticulture  
(7% of pop.)



Genetics, Husbandry,  
Parasitology, etc.  
(6% of pop.)



Soil Science, etc.  
(5% of pop.)



All Disciplines

EXPLANATION:

Responses to question 15 for each pub. are shown as a percentage of the 757 scientists who reported "yes" or "no" on the Bibliography of Agriculture and/or Biological Abstracts.

- Both - "yes" for both pubs.
- Only - "yes" for one pub. and "no" for the other
- At least - "yes" for one pub. and blank for the other
- Neither - "no" for both pubs.

The percentages for only and at least for the Bibliography have been combined on the chart to represent the only category. This interprets a blank for the other pub to be the same as a "no". Add the at least and only percents to the both percents to derive the percentage of scientists who "see" the Bibliography.

The words Biological Abstracts may be substituted for the words Bibliography in the above explanation.



Total Number of Responses, Bibliography of Agr. and/or Biological Abstracts, and Percent of Total

Discipline	See Both Pubs.	See B. of A. <u>1/</u>	See Biol. Ab. <u>1/</u>	See Neither Pub.	Total Number Resp.
	Pct.	Pct.	Pct.	Pct.	No.
Forestry	68	83	78	7	113
Plant Pathology, Physiology, etc.	70	84	80	6	91
Entomology, Nematology ,	72	85	75	12	74
Agronomy	67	80	81	6	52
Genetics	<u>72</u>	<u>84</u>	<u>84</u>	<u>4</u>	<u>50</u>
Sub-total	79	84	79	7	380
Soil Scientists	51	83	56	12	41
Technology & Other	46	60	59	27	15
Economics	10	75	10	25	93
Chemistry	31	40	50	41	153
Engineering	<u>28</u>	<u>56</u>	<u>31</u>	<u>41</u>	<u>75</u>
Total	49	71	58	20	757
Grade: Junior	53	70	61	22	341
Senior	46	71	56	19	416
Area: Field	52	68	64	20	578
D. C. -Beltsville	39	77	41	21	179

1/ Includes percentage that see both publications shown in Column 1

TABLE S6

	See Both Pub.	See Only B. A.	See at least B. A.	See Only Bio. Ab.	See at least Bio. Ab.	See Neither Pub.	TOTAL NUMBER			
	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Reporting Pct.	No.	Population No.	Rank
Forestry	68	14	1	9	1	7	100	113	706	2
Plant Pathology, Physiology, etc.	70	12	2	9	1	6	100	91	458	5
Entomology, Nematology	72	12	1	3	-	12	100	74	435	6
Agronomy, Horticulture	67	13	-	10	4	6	100	52	308	7
Genetics, Husbandry, Parasitol.	72	8	4	10	2	4	100	50	276	8
Soil Science, etc.	51	22	10	5	-	12	100	41	+22	9
Technology & Other	46	7	7	13	-	27	100	15	76	10
Economics	10	45	20	-	-	25	100	93	623	3
Chemistry, Physics	31	6	3	16	3	41	100	153	876	1
Engineering	<u>28</u>	<u>21</u>	<u>7</u>	<u>3</u>	<u>-</u>	<u>41</u>	<u>100</u>	<u>75</u>	<u>472</u>	<u>4</u>
Total	49	17	5	8	1	20	100	757	4463	-
Grade: Junior	53	12	5	7	1	22	100	341	2197	-
Senior	46	20	5	9	1	19	100	416	2266	-
Area: Field	52	13	3	10	2	20	100	578	3284	-
D. C. -Beltsville	39	27	11	2	-	21	100	179	1179	-



The "seeing" pattern of the two publications is determined to a larger extent by the discipline group rather than the Civil Service grade or the area. The differences in the percentages for the discipline groups are effectively presented in the pie charts, fig. S4, table S5 and S6.

There are five discipline groups which follow about the same pattern of "seeing" the two publications, namely (1) forestry, (2) plant pathology, plant physiology, bacteriology, etc. (3) entomology and nematology, (4) agronomy, horticulture, and (5) genetics. The percentages for these groups range: from 67 to 72 percent who see both publications; from 12 to 15 who see only the Bibliography (includes the "at least" group explained above); 8 to 14 percent who see only Biological Abstracts. To summarize, the group averages for the 5 disciplines show 80 to 85 percent see the Bibliography, 75 to 84 see the Abstract journal, while 4 to 12 percent see neither of the publications.

The soil scientists discipline group see the Bibliography about the same as the above five groups -- (82 percent), however, only 51 percent see both, 5 percent see only Biological Abstracts while 12 percent see neither of the two publications.

An entirely different pattern of "seeing" the two publications is shown for the three discipline groups of (1) chemistry, physics, (2) economics, and (3) engineers. These three groups, which account for 44 percent of the research scientist population, show a large percent of the respondents who "see" neither of the two publications. There were 41 percent of the economists who see neither of the publications. However, for these three discipline groups, the "seeing" pattern varies for the two publications.

There are 75 percent of the economists who see the Bibliography, but only 10 percent see both publications and none see only Biological Abstracts. For the chemistry and engineering groups about the same percentage see both of the publications (31 and 28 percent), but 19 percent of the chemists see only Biological Abstracts while the engineers report 28 percent see only the Bibliography. To summarize, 40 percent of the chemists group see the Bibliography and 50 percent see the Biological Abstracts; 56 percent of the engineers see the Bibliography, but 31 percent see Biological Abstracts.

The differences between the discipline groups accounts for some of the differences between areas. The economists, the third largest discipline group, do not seem to need the Biological Abstracts. There were 65 out of 74 economists who said "no" they did not see this publication and about 3/4 of the economist are located in Washington, D.C.

Many field researchers in the discipline group "chemistry, physics" do not make use of the Bibliography. There were 73 field researchers who said "no" they did not see the Bibliography compared with 45 who said "yes". Out of the 45 who see the publication there were only 26 who were acquainted with its contents (see Question 16 in following section). Evidently other indexes serve this group better. This is substantiated by replies to question 23 which asked for the name of abstracts or bibliographies that are of equal or greater value than the Bibliography of Agriculture or Biological Abstracts. The index listed by the largest number of researchers was "Chemical abstracts". It was cited 154 times. See fig. S4 and table S5 and S6.

#### Question 16 - Availability of the Bibliography of Agriculture and Biological Abstracts

Those scientists who indicated that they see issues of these publications were then asked about the availability of the copies they see. They were asked, (a) if they have personal copies, (b) if copies are circulated to them, (c) if copies are available in the building where they work and, (d) if copies are available in libraries close to where they work, but not in their buildings. Although (c) and (d) are exclusive there were some respondents who marked both. The percentages are based on the number who answered one or more parts of question 16. This is the same as the number of "yes" responses in question 15, less the number blank for question 16. There were 5 blanks for the Bibliography and 3 for Biological Abstracts.

One concludes that, in general, availability to scientists of these two means of access to literature is about equal. The percentages for source A through D total 142 for the Bibliography and 132 for Biological Abstracts. This shows that many of the scientists can get the publication from more than one source. See fig. S7 and table S8.

#### Question 17 - Do you see issues of these publications often enough so that you are acquainted with the organization of their contents? See Fig. S 9 and S 10.

As explained in the comments under question 15, percentages for the discipline groups and other breakouts were based on the number of responses to question 15, that is those reported "seeing" the Bibliography of Agriculture and/or Biological Abstracts. See fig. S9 and table S10. One percent of total responding to the "seeing" (question 15) did not answer "acquainted" (question 17).

The 5 discipline groups that show similar "seeing" patterns for the two publications are again consistent in the percentages for "acquainted with organization of their contents" -- these 5 groups account for half the population, namely Forestry; Plant pathology, physiology etc.; entomology, nematology; agronomy; genetics.

For the 5-discipline groups the 84 percent who reported seeing the Bibliography is reduced to 78 percent of the scientists who are acquainted with the contents. The 79 percent who report seeing Biological Abstracts is reduced to 69 percent for those who are acquainted with the contents of this publication.

The chemistry group which has a low "seeing" rate of 40 percent for the Bibliography and 50 percent for the abstract journal falls to 24 percent for the "acquainted" rate for the Bibliography and 32 percent for Biological abstracts.

Although a high (75 percent) percentage of the economics group report "seeing" the Bibliography only 56 percent are acquainted with the organization of contents. Biological Abstracts does not serve as a source for the economics group as only 6 percent reported acquaintance with the contents.

The Bibliography of Agriculture and Biological Abstracts  
Number responding to any part of question 16 = 100%

Question 16

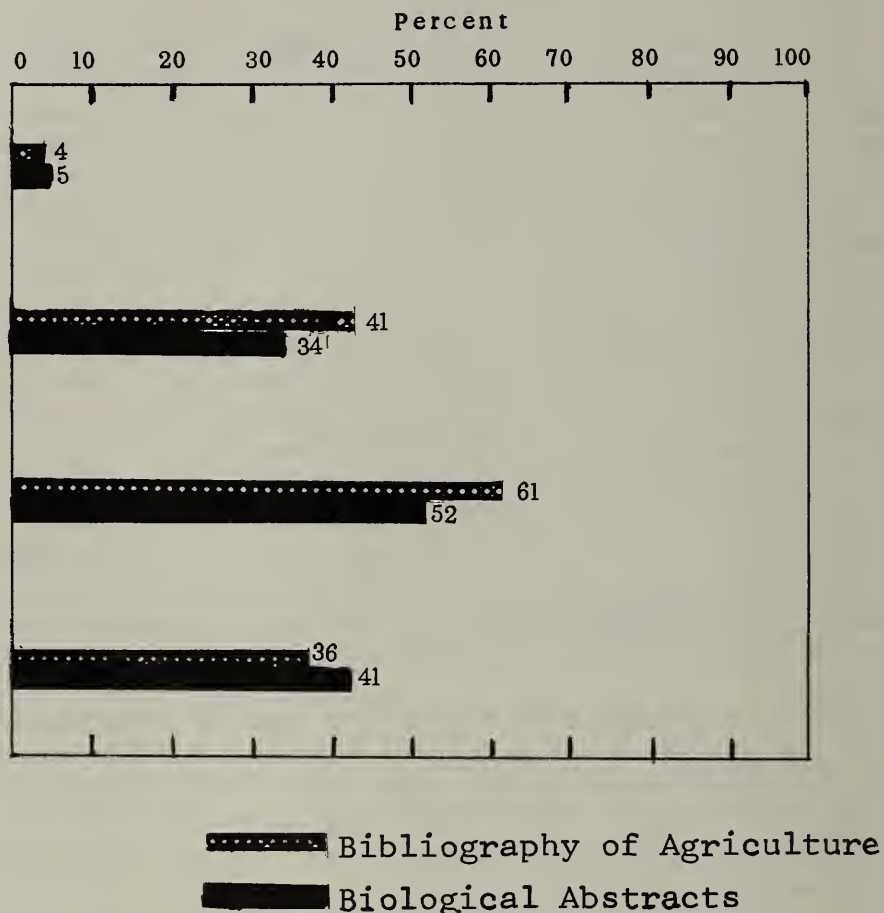
If you see issue of this pub.  
is source of pub:

A. Personal set

B. Circulated to you

C. Available in your building

D. Available in library close  
but not in your building



There is very little difference in the percentage of junior grade or senior grade who are acquainted with Biological Abstracts (47 and 46 percent respectively). However, for the Bibliography the "seeing" rate is about the same for the two groups (70 and 71 percent), but a larger percentage (63 percent) of the senior grade scientists are acquainted with the contents than the junior grade (57 percent).

There are 58 percent of the field scientists who are acquainted with the Bibliography compared with 65 percent for the Capitol Area. For Biological Abstracts 51 percent of the field scientists are acquainted with the journal, but only 33 percent of the Capitol Area scientists.

For all scientists in the sample, 60 percent are acquainted with the contents of the Bibliography of Agriculture and 46 percent with Biological abstracts.

Question 18 - Is your use of this publication: (a) To keep aware of results of current research ? (b) To select literature reference when you are reviewing what has been done on a problem in your scientific field ?

The 5 discipline groups who show similar "seeing" patterns and the high "acquaintance" rate rely on the publications for both current awareness and for selecting references. About 2/3 of these respondents answered "yes" to both purposes for the Bibliography and the same holds true for the Abstract journal. The forestry group shows the highest percentage use for current awareness. Forestry reports 84 percent of those who are acquainted with the content organization of the Bibliography use it for current awareness compared with 75 percent who use it to select literature references. The same relationship between the two uses is shown for the Abstract journal -- 81 percent for current awareness and 71 percent for selecting references.

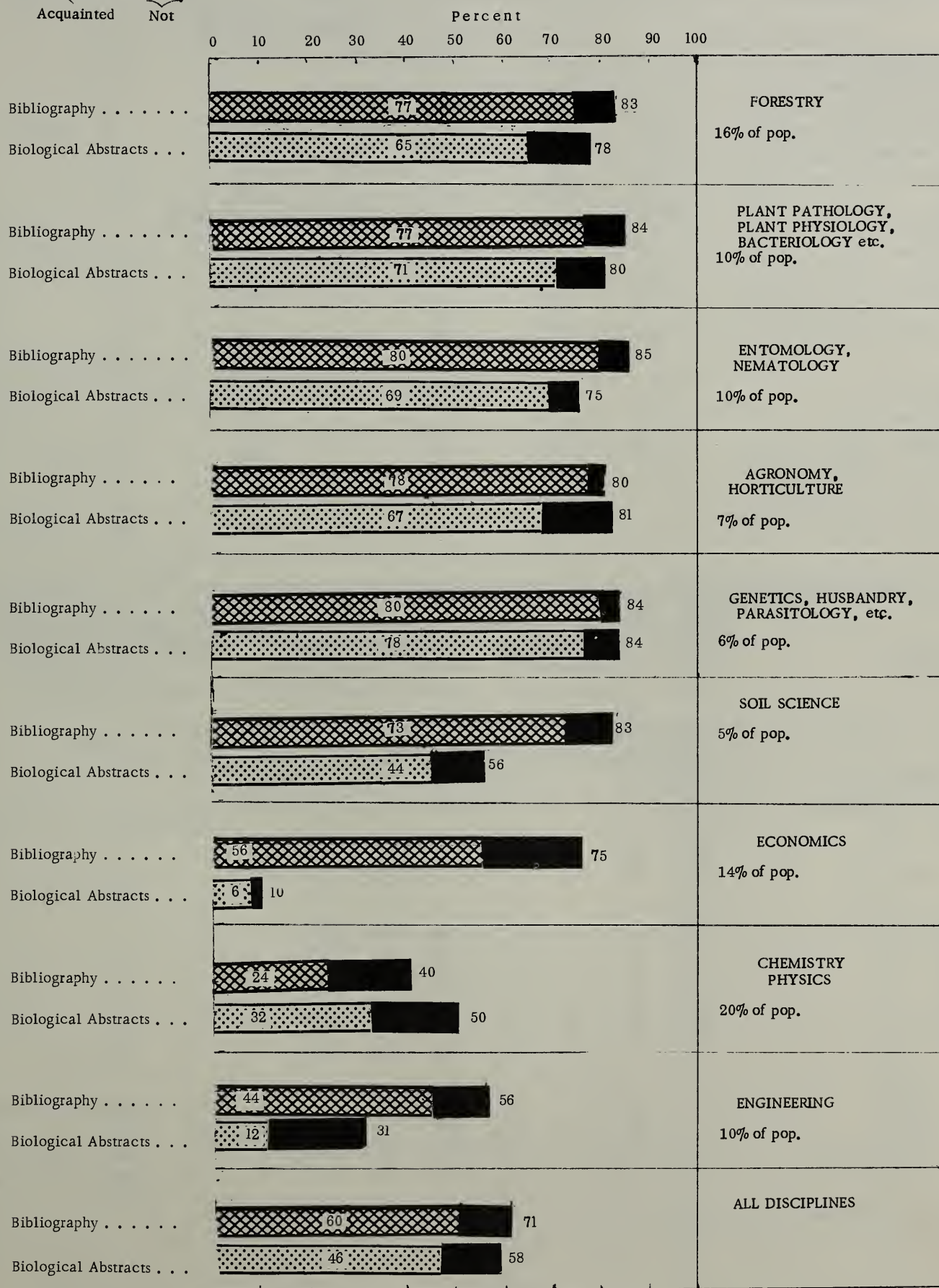
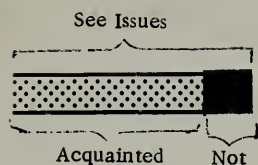
For the other 4 discipline groups that have a high "acquaintance" rate, current awareness is from 2 to 9 percentage points lower than the use to select references, and this is true for both publications. See fig. S13 and table S11.



## BIBLIOGRAPHY OF AGRICULTURE AND BIOLOGICAL ABSTRACTS

Q. 15 and 17  
 "See issues" and "Acquainted with organization of contents"  
 by Scientist discipline groups

Fig. S 9



Number of Respondents who see either  
 or both publications = 100 percent



	Bibliography of Agriculture		Biological Abstracts		TABLE S8
	Responses		Responses		
Q. 16. If yes (see the pub. ), are they:	Number	Percent of	Number	Percent of	
	Responding	No. Answering	Responding	No. Answering	
	"yes"	any part of Q.16	"yes"	any part of Q. 16	
	FIELD SCIENTISTS				
	Number	Percent	Number	Percent	
A. A personal set	13	3	13	4	
B. Circulated to you	159	41	129	36	
C. Available in your building	231	59	193	53	
D. Available in nearby Library	149	38	148	41	
Total - "yes" 16A through D	552	141	483	134	
Total answering any part of Q. 16	392	100	362	100	
	D. C. -BELTSVILLE SCIENTISTS				
	6	4	8	10	
B. Circulated to you	61	44	19	25	
C. Available in your building	92	67	35	46	
D. Available in nearby library	42	31	31	41	
Total - "yes" 16A through D	201	146	93	122	
Total answering any part of Q. 16	138	100	76	100	
	ALL SCIENTISTS				
	19	4	21	5	
B. Circulated to you	220	41	148	34	
C. Available in your building	323	61	228	52	
D. Available in nearby library	191	36	179	41	
Total - "yes" 16A through D	753	142	576	132	
Total answering any part of Q. 16	530	100	438	100	

Question 17 - Are you acquainted with the organization of the contents? TABLE S10

Discipline		Responses to Q. 17 as percent of total responses to Q. 15 for B of A and/or Biol. Abstracts								
		Bibliography of Agriculture				Biological Abstracts			Total Number of Responses	
		See Pub.	Acquainted with			See Pub.	Acquainted with			Q. 15
		Q. 15	contents - Q.17			Q. 15	contents - Q.17			B. of A. and/or Bio. Abs.
			Yes	No	N. A.		Yes	No	N. A.	
		Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Number	
Forestry		83	77	4	2	78	65	9	4	113
Plant pathology, etc.		84	77	6	1	80	71	8	1	91
Entomology, Nematology		85	80	4	1	75	69	4	2	74
Agronomy		80	78	2	0	81	67	12	2	52
Genetics		<u>84</u>	<u>80</u>	<u>4</u>	<u>0</u>	<u>84</u>	<u>78</u>	<u>4</u>	<u>2</u>	<u>50</u>
Sub-total		84	78	5	1	79	69	8	2	380
Soil Science		83	73	7	3	56	44	12	0	41
Technology & Other		60	46	13	0	59	40	19	0	15
Economics		75	56	18	1	10	6	4	0	93
Chemistry		40	24	16	0	50	32	18	0	153
Engineering		<u>56</u>	<u>44</u>	<u>11</u>	<u>1</u>	<u>31</u>	<u>12</u>	<u>19</u>	<u>0</u>	<u>75</u>
Total		71	60	10	1	58	46	11	1	757
Grade:	Junior	70	57	12	1	61	47	13	1	341
	Senior	71	63	7	1	56	46	9	1	416
Area:	Field	68	58	9	1	64	51	12	1	578
	D. C. -Beltsville	77	65	11	1	41	33	7	1	179

Note: N. A. is abbreviation for not answered

TABLE S11

Q. 18. IS YOUR USE OF THIS PUBLICATION:

(a) To keep aware of results of current research

(b) To select literature references on a problem in your field

"Yes" Responses to Q. 18 as percent of "yes" responses to Q. 17 - Acquainted with the pub.

Discipline	Bibliography of Agriculture				Biological Abstracts			
	"Yes" Responses				"Yes" Responses			
	USE				USE			
	Acq. with Pub. Q. 17	Current Aware- ness Q. 18a	Select Ref. Q. 18b	Both (a) and (b)	Acq. with Pub. Q. 17	Current Aware- ness Q. 18a	Select Ref. Q. 18b	Both (a) and (b)
	No.	Pct.	Pct.	Pct.	No.	Pct.	Pct.	Pct.
Forestry	87	83	75	57	73	81	71	60
Plant pathology, etc.	70	86	89	77	65	83	86	77
Entomology, Nematology	59	80	85	73	51	73	84	69
Agronomy	41	80	85	71	35	83	86	74
Genetics	40	78	80	62	39	90	87	79
Soil Science	30	57	77	50	18	-	-	-
Technology & Other	7	-	-	-	6	-	-	-
Economics	52	58	88	52	5	-	-	-
Chemistry	37	76	70	57	48	73	79	65
Engineering	34	59	91	53	10	-	-	-
Total	457	75	83	63	350	79	82	69
"No" Response	-	15	8	-	-	11	8	-
Not answered	-	10	-	-	-	10	10	-

Note: Percentages omitted for group with less than 25 reports for Question 17

Q. 19 - Literature Coverage

TABLE S12

"Yes" responses to Q. 19 as percent of "yes" responses to Q. 17 - Acquainted with the pub.

Discipline	Literature Coverage Adequate Q. 19			
	Acquainted with Publication Q. 17	Published in English (a)	Published in Foreign Language (b)	Coverage Includes too many references Q. 19 (c)
	No.	Pct.	Pct.	Pct.
BIBLIOGRAPHY OF AGRICULTURE				
Forestry	87	77	57	9
Plant pathology, etc.	70	86	66	14
Entomology, Nematology	59	83	61	7
Agronomy	41	93	66	17
Genetics	40	82	50	10
Soil Science	30	77	53	7
Economics	52	75	52	23
Chemistry	37	65	43	11
Engineering	34	71	53	6
Total	457	79	56	12
BIOLOGICAL ABSTRACTS				
Forestry	73	68	51	8
Plant pathology, etc.	65	78	58	8
Entomology, Nematology	51	80	51	2
Agronomy	35	91	60	9
Genetics	39	90	51	0
Chemistry	48	73	46	4
Total	350	76	50	6

Note: Omitted are discipline groups with less than 25 reports for Q. 17



Question 19 - We need to know your opinion of the adequacy with which literature in one of your areas of special competence is covered. Specify the area of competence and answer following questions about it: (A) Does coverage of literature published in English seem adequate? (B) Does coverage of literature published in foreign languages seem adequate? (C) Does coverage include too many references? (Percentages based on the number reporting "yes" to Question 17 "Acquainted with the content arrangement".)

A. For the Bibliography of Agriculture, there was fair agreement in the answers to A, relating to coverage of literature in English when comparing averages of the discipline groups. Of the 5 high "acquaintance" groups these averages ranged from 77 to 93 with 3 ranging from 82 to 86 percent. The average for all groups was 79 percent and may be compared with the 76 percent reported for Biological Abstracts. This would indicate that for the most part, scientists in the Department believe that coverage of articles published in English is adequate in both publications.

B. The coverage of literature published in foreign language in the Bibliography was considered adequate by 56 percent of those who were acquainted with the publication. This was 23 percent less than the number reporting that English language coverage was adequate, and this relationship held for most of the discipline groups. A slightly lower percentage thought the foreign language coverage was adequate in Biological Abstracts, being reported at 50 percent, or 26 percent lower than reported for English language coverage. This relationship did not hold for the discipline groups. The Genetics groups reported 90 percent thought English language coverage was adequate compared to only 51 percent reported for foreign language, likewise the Agronomy group with 91 for English against 60 for foreign language coverage. On the other hand the Forestry group reported English coverage adequacy as low as 68 percent and foreign language at 51 percent.

C. The Bibliography of Agriculture coverage includes too many references was expressed by very few scientists in the 5 high "acquaintance" disciplines as group percentages ranged from 7 to 17 percent. In the lower "acquaintance" groups the highest percentage that thought there were too many references was reported by the Economics group at 23 percent. Comments by various scientists explained "too many references" in terms of there being too much that was of little value or too much that did not apply to the narrow field of a scientist's specialty, or not indexed in enough detail to break out a special field. The average for all scientists was 12 percent for the Bibliography. For Biological Abstracts only 6 percent thought the publication included too many references, and the groups ranged from zero to 9 percent. See table S12.

Question 20 - Cumulative author index and subject index.

The scientists were reminded that following publication of each volume the Bibliography of Agriculture and Biological abstracts there is issued a cumulative author index and a subject index. The scientists were asked five questions about these indexes to determine how many use the index and the usefulness of this tool for searching the literature in one of the scientists areas of special competence. See Fig. S13 and Table S14.

USE:

A. Did you use the latest cumulative author index to assemble references by chosen authors which contained information pertinent to a problem in the scientific area specified in question 19?

B. Did you use the latest annual subject index to assemble references as those referred to above?

The answers to A. and B. were not much different for the Bibliography and Biological Abstracts. However, comparing the two indexes, not nearly as many scientists had used the cumulative author index, although those who did, also had used the latest subject index. Use of the Bibliography subject index ranged from a low of 37 percent for the Forestry discipline, to 66 percent for plant pathology, physiology etc. group, although near the top of the range were the genetics, nematology at 63 pct.

C. If your answer is yes (used the latest annual subject index) did you get references to publications that contained less specific information than you wanted?

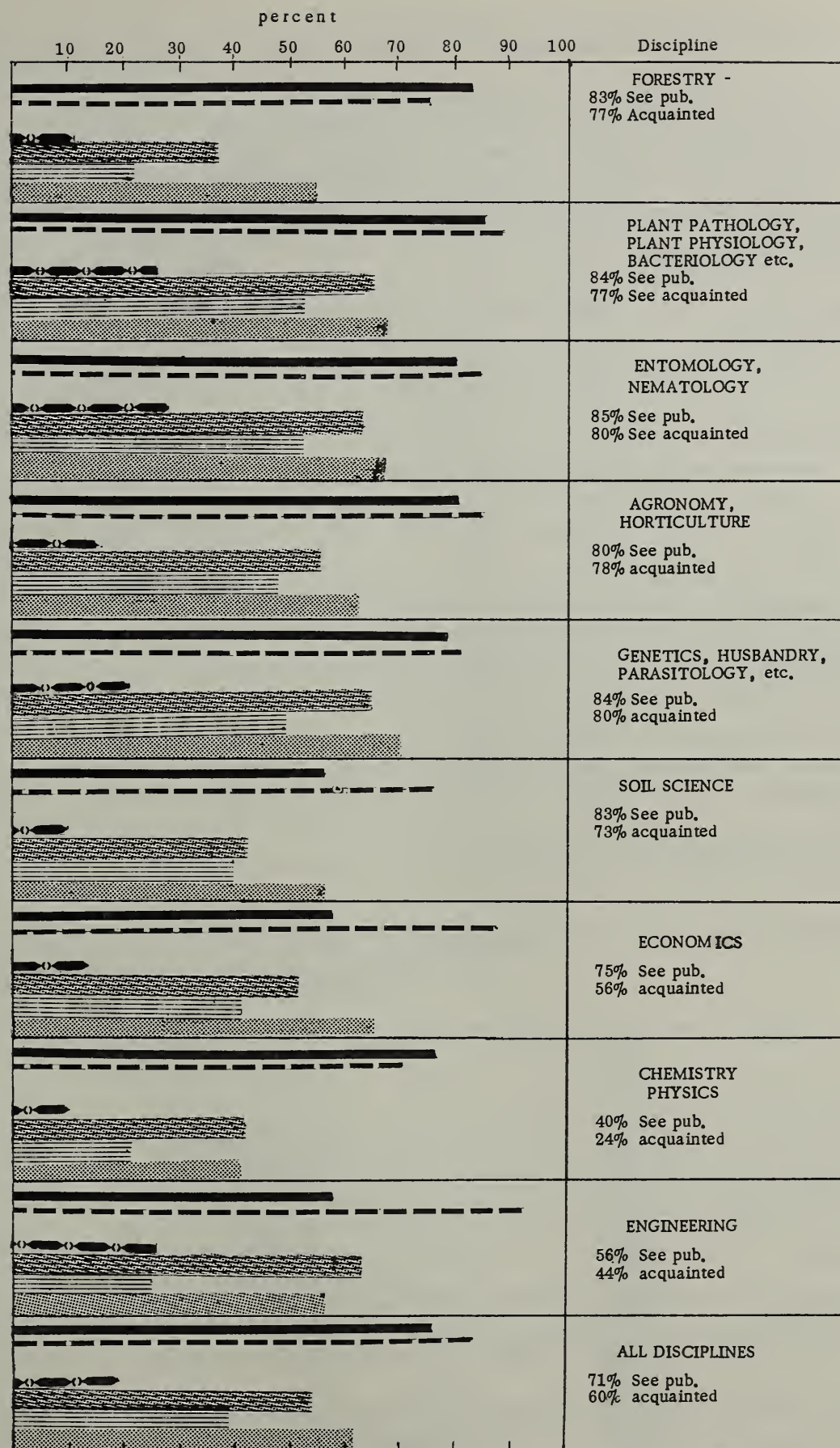
Part C was designed to determine whether the categories in the subject indexes are too broad, so that the scientist is forced to consult publications that do not contain the specific information he is seeking. Among the 5 disciplines which have a high acquaintance with the Bibliography, the discipline group percentages ranged from 28 to 47 percent who indicated that the publications were less specific than they wanted, with 40 percent reported for all disciplines. This can be compared to 36 percent for all scientists reporting on Biological Abstracts.

D. Does the annual subject index seem to represent an efficient method by which you may determine which publications you should get?

There was fair agreement among the high user discipline groups of the percentage that thought the index of the Bibliography is an efficient method for gaining access to desired literature, ranging from 55 percent to 70 percent and averaged 61 percent for all disciplines. The use of the latest issue (Question 20B) would depend somewhat on what phase of a particular research problem a scientist was engaged in when he answered the question. Therefore the use of the latest issue is not necessarily highly correlated with his appraisal of its usefulness (Question 20D). However, for most disciplines, the percentage that reported the use of the latest annual issue was only slightly lower than the percentage that thought the subject index an efficient tool. The exception was the Forestry discipline group. Although only 37 percent had used the latest issue, 55 percent thought it an efficient tool, likewise the Soil Science group with 43 percent reporting it had used the latest issue, but 56 percent thought it an efficient tool.



FIG. S 13  
 USE OF THE BIBLIOGRAPHY OF AGRICULTURE  
 By discipline groups of scientists  
 Q. 18 and 20  
 "Yes" responses to Selected questions as a percentage of Number who are Acquainted with organization of contents



Use of publication:  
 ..... Current awareness  
 ..... To select references  
 ..... Used latest cumulative author index

Annual subject index:  
 ..... Used the latest index  
 ..... in past year searched as many as 6 volumes  
 ..... for information on one problem  
 ..... Index seems to represent efficient method to  
 ..... to determine which publications to get

"Yes" responses to Q. 20 as percent of "yes" responses to Q. 17 - acquainted with the pub.

Discipline	Acq. with Pub. Q. 17	Author index used latest cum. issue	Subject index used latest ann. issue	Used Both Author & Subject (a)&(b)	Latest (b) gave less specific than wanted (c)	An efficient tool (d)	Searched 6 volumes for information on one problem (e)
BIBLIOGRAPHY OF AGRICULTURE	No.	(a) Pct.	(b) Pct.	(a)&(b) Pct.	(c) Pct.	(d) Pct.	(e) Pct.
Forestry	87	11	37	10	28	55	21
Plant Pathology, etc.	70	26	66	26	47	67	51
Entomology, Nematology	59	27	63	27	39	66	51
Agronomy	41	15	56	15	41	61	46
Genetics	40	22	65	20	38	70	48
Soil Science	30	10	43	10	27	57	40
Technology & Other	7	-	-	-	-	-	-
Economics	52	14	52	13	35	67	42
Chemistry	37	11	43	8	27	43	22
Engineering	34	26	62	24	56	56	26
TOTAL	457	19	54	18	37	61	39
BIOLOGICAL ABSTRACTS							
Forestry	73	10	32	8	23	47	23
Plant Pathology, etc.	65	23	66	23	49	68	49
Entomology, Nematology	51	27	65	24	31	63	47
Agronomy	35	17	57	17	46	77	49
Genetics	39	21	59	21	38	69	54
Chemistry	48	19	52	15	35	56	46
TOTAL	350	19	53	18	36	59	42

Note: Omitted are discipline groups with less than 25 reports for Q. 17

TABLE S 15

Q. 23 - Are there published abstracts or bibliographies that are of equal or greater value to you than the B. of A. or Biol. Abs. ?

"Yes" responses as a percentage of Total "Yes" and "No"

Discipline		RESPONSES		Total	Not	Total
		"Yes"	"No"	Yes & No	Answered	
Forestry	Number	73	26	99	14	113
	Percent	74 o/o	26 o/o	100 o/o	12 o/o	
Plant Pathology, etc.	Number	68	14	82	9	91
	Percent	83 o/o	18 o/o	100 o/o	10 o/o	
Economics	Number	31	41	72	23	95
	Percent	43 o/o	57 o/o	100 o/o	24 o/o	
Entomology, Nematology	Number	33	27	60	14	74
	Percent	55 o/o	45 o/o	100 o/o	15 o/o	
Chemistry, physics	Number	127	4	131	24	155
	Percent	97 o/o	3 o/o	100 o/o	15 o/o	
Agronomy, Horticulture	Number	24	14	38	15	53
	Percent	63 o/o	37 o/o	100 o/o	28 o/o	
Genetics	Number	26	17	43	7	50
	Percent	60 o/o	40 o/o	100 o/o	14 o/o	
Engineering	Number	31	18	49	28	77
	Percent	63 o/o	37 o/o	100 o/o	36 o/o	
Soil Science	Number	23	8	31	10	41
	Percent	74 o/o	26 o/o	100 o/o	24 o/o	
Technology and Other	Number	8	-	8	7	15
	Percent	100 o/o	-	100 o/o	47 o/o	
All Disciplines	Number	444	169	613	151	764
	Percent	72 o/o	28 o/o	100 o/o	20 o/o	



E. In the past year did you make a comprehensive search of the subject index of as many as 6 volumes for access to information on any one official research problem ?

In the 5 discipline groups with a high "acquaintance" rate with Bibliography of Agriculture about half had searched 6 volumes of this publication for information on one research problem, with the exception of the Forestry group which reported 21 percent had made such a search. Chemistry, a low "acquaintance" group was lowest at 20 percent. The Forestry and Chemistry groups showed a much higher percentage had searched 6 volumes of Biological Abstracts -- 68 and 50 percent respectively. Agronomy also showed higher usage of the Abstract Journal; 51 percent had searched 6 volumes of this publication compared with 46 who had searched the Bibliography. The other discipline groups averaged from 7 to 10 percentage points lower for the Abstract Journal than for the Bibliography.

Question 23 - Are there published abstracts or bibliographies that are of equal or greater value to you than the Bibliography of Agriculture or Biological Abstracts ? Is so list them.

Scientists in the U. S. Department of Agriculture conduct research, or are interested in many scientific disciplines. For many of these areas of science there are specialized bibliographies or abstracting services that serve particular needs more adequately than do either the Bibliography of Agriculture or Biological Abstracts. An effort was made to identify the titles of other publications that served specialized means of gaining access to literature. The scientists were asked if there are published abstracts or bibliographies that are of equal or greater value than the Bibliography and Biological Abstracts. Of the 473 field scientists who answered the question, 354 or 75 percent reported "yes", there were other such publications. Of the 140 D. C. -Beltsville scientists who answered, 90 or 64 percent also indicated that other publications served their needs for access to literature as well or better.

The 444 scientists who answered "yes" names 138 different publications that they thought qualified to be of equal or greater value than the Bibliography of Agriculture or Biological Abstracts. The 138 publications were cited 702 times. There were 10 journals that accounted for 394 citations. These were Chemical Abstracts cited by 154 scientists, Forestry Abstracts by 73, Review of Applied Mycology by 41, Plant Breeding Abstracts by 27, Chemical Titles by 20, Review of Applied Entomology by 19, Current Contents by 17, Soils and Fertilizers by 16, Nutrition Abstracts and Reviews by 15, Horticultural Abstracts cited by 12 scientists.

On the other hand, there were 70 different journal titles each cited by only one scientist and 41 titles each cited by 2 to 4 scientists. Although the question specified "published abstract or bibliographies" about half of the journal titles cited were not abstracts or bibliographies. Many of them were journals of professional societies, some of which included a small section of book reviews or abstracts. A list of all titles will be found further on in this section.

## EVALUATION OF TWO SOURCES

### DISCUSSION BY DISCIPLINE GROUPS

Disciplines are listed in order according to discipline rank in the USDA Research population of scientific and technical workers.

#### Chemistry, Physics

This discipline group leads in the Department research scientists population with 20 percent of the total or 876 scientists as of June 1962. Neither the Bibliography, nor Biological Abstracts is used by very many of this group as 41 percent reported that they "see neither" publication. Furthermore, only 24 percent are acquainted with the content arrangement of the Bibliography and 32 percent acquainted in this way with Biological Abstracts. However, of those who are acquainted with the Bibliography, a large percentage use it. About 3/4 report they use it for current awareness and nearly that many use it to select references on a current problem. In spite of this high reported usage, less than half (43 percent) rate the subject index as an efficient tool, and less than 1/4 had searched 6 volumes on one problem.

Biological Abstracts is rated somewhat higher. Of those acquainted with the publication, over half used the latest annual subject index (52 percent) and a few more than this (56 percent) thought it an efficient method for selecting publications. As many as 6 volumes had been searched on one problem by 46 percent of those acquainted, which is much higher than the 22 percent who had searched the Bibliography.

But 97 percent said there were other published abstracts or bibliographies that were equal or of greater value. Chemical Abstracts as well Chemical Titles was at the top of the list names for other sources.

Discipline: CHEMISTRY, PHYSICS

Question		"Yes" Responses	
		Bibliography of Agriculture Percent	Biological Abstracts Percent
15	See the publication	40	50
17	Acquainted with content organization	24	32
18a	Use publication for current awareness	76	73
18b	Use publication to select references	70	79
20a	Used the latest cumulative author index	11	19
20b	Used the latest annual subject index	43	52
20d	Annual subject index is efficient method for selecting publications	43	56
20e	Searched 6 volumes on one problem (Subject indexes)	22	46

Note: Percentage for Question 15 and 17 based on total responses to "see" for either publication. Percentages for other questions based on "yes" responses to "acquainted" for each publication.

#### Forestry

This group accounts for 16 percent of the Department's research scientists. A large percentage of the forestry group are familiar with both publications. About 4/5 see the Bibliography and almost that many see the Abstract journal. The publication usage rate is also high for both publications. There were 77 percent of the total respondents who reported acquaintance with the Bibliography. Out of this group there were 83 percent who use the index for current awareness and 75 percent use it to select literature references on a problem in the scientist's field. However, the Bibliography rates low on actual use as only 37 percent had used the latest subject index, and 21 percent had searched as many as 6 volumes on one problem. About half (55 percent) thought the subject index an efficient method for selecting publications, and this was next to the lowest rating of the discipline groups, with only chemistry rating this tool lower.

The percentage reporting the various uses of the Biological Abstracts followed the same pattern as the Bibliography, but about 5 percentage points lower except the number who had searched 6 volumes was up a little, with 23 percent reporting such a search.

It appears that the Forestry group has a high acquaintance rate with the two publications, but many turn elsewhere for information in their field. About 3/4 reported other abstracts or bibliographies of equal or greater value. Forestry Abstracts was cited 73 times, which was second to Chemical Abstracts; the leading title cited.

Discipline: FORESTRY

Question		"Yes" Responses	
		Bibliography of Agriculture Percent	Biological Abstracts Percent
15	See the publication	83	78
17	Acquainted with content organization	77	65
18a	Use publication for current awareness	83	81
18b	Use publication to select references	75	71
20a	Used the latest cumulative author index	11	10
20b	Used the latest annual subject index	37	32
20d	Annual subject index is efficient method for selecting publications	55	47
20e	Searched 6 volumes on one problem (Subject indexes)		

Note: Percentage for Question 15 and 17 based on total responses to "see" for either publication. Percentages for other questions based on "yes" responses to "acquainted" for each publication.

#### Economics -- Agricultural Economics, Home Economics, Social Science

This, the third largest research discipline group in the Department, accounts for 14 percent of the population and 3/4 of the scientists are located in Washington, D.C. Biological Abstracts subject field appears to be outside the interest field of the economists as only 6 percent reported acquaintance with it. About 3/4 of the group "see" the Bibliography, but only about half use it enough to be acquainted with the content arrangement. Only half of those "acquainted" used the latest subject index, while 2/5 had searched as many as 6 volumes for information on one problem, but 2/3 thought it an efficient tool. Although 43 percent reported that there were other indexes of equal or higher value than the Bibliography or Biological Abstracts, this was the lowest group percentage reported on this question.

The economics group cited the following as being of equal or greater value than either of the two publications: Agricultural Index, World Agricultural Economics and Rural Sociology Abstracts, Sociological Abstracts, Farm Economics Journal and Econometrica. The latter two are not bibliographies or abstracts.



Discipline: AGRICULTURAL ECONOMICS,  
HOME ECONOMICS, SOCIAL  
SCIENCE, OTHER ECONOMICS

Question		"Yes" Responses	
		Bibliography of Agriculture Percent	Biological Abstracts Percent
15	See the publication	75	10
17	Acquainted with content organization	56	6
18a	Use publication for current awareness	58	6
18b	Use publication to select references	88	-
20a	Used the latest cumulative author index	14	-
20b	Used the latest annual subject index	52	-
20d	Annual subject index is efficient method for selecting publications	67	-
20e	Searched 6 volumes on one problem (Subject indexes)	42	-

Note: Percentage for Question 15 and 17 based on total responses to "see" for either publication. Percentages for other questions based on "yes" responses to "acquainted" for each publication.

### Engineering

This discipline group ranks fourth in number of Department researchers, to make up 10 percent of this population.

Biological Abstracts is outside the interest field with only 12 percent who reported being acquainted with it. Nor does the Bibliography of Agriculture serve many of the research engineers. About half of the engineers reported they see the Bibliography, while little more than 2/5 use this index journal enough to be familiar with the content arrangement. But of those who are knowledgeable about the Bibliography, 9/10 use it to select references when working on a problem and 3/5 use it for current awareness. The percentage of engineers who had used the latest annual subject index is above the average (62 percent of those who see it), but not very many (26 percent) had searched as many as 6 volumes for information on one problem.

Discipline: ENGINEERING

Question		"Yes" Responses	
		Bibliography of Agriculture Percent	Biological Abstracts Percent
15	See the publication	56	31
17	Acquainted with content organization	44	12
18a	Use publication for current awareness	59	-
18b	Use publication to select references	91	-
20a	Used the latest cumulative author index	26	-
20b	Used the latest annual subject index	62	-
20d	Annual subject index is efficient method for selecting publications	56	-
20e	Searched 6 volumes on one problem (Subject indexes)	26	-

Note: Percentage for Question 15 and 17 based on total responses to "see" for either publication. Percentages for other questions based on "yes" responses to "acquainted" for each publication.

- (1) Plant Pathology, Plant Physiology, Bacteriology, Botany, etc.
- (2) Entomology, Nematology
- (3) Agronomy, Horticulture
- (4) Genetics, Husbandry, Parasitology, etc.

These four discipline groups which account for 33 percent of the Department's scientific research workers had the highest percentage who "see" both publications. Furthermore they show the highest percentage who responded "yes" to the questions relating to the use of the Bibliography and Biological Abstracts. Regardless of the high usage of the two journals, 83 percent of the (1) Plant Pathology, etc. group said "yes" there were published abstracts or bibliographies of equal or greater value than these two journals.

#### Bibliography of Agriculture:

The percentage who see the Bibliography of Agriculture ranges from 80 to 84 percent for the four discipline group averages. Most of those who see the Bibliography are also acquainted with the content arrangement. About 4/5 of those who are acquainted with this publication, use it for current awareness, and a slightly higher number (5 percent) use it to select literature reference when reviewing what has been done in a problem in a specific scientific field. The latest subject index of the Bibliography was used by 2/3 of the scientists acquainted with the publication and this number thought the subject an efficient method for selecting references. However, only about half had made a comprehensive subject index search of as many as 6 volumes on any one research problem.

# Biological Abstracts:

Comparing Biological Abstracts with the Bibliography for these 4 discipline groups, a higher percentage were acquainted with the Bibliography than with the Abstract journal. However, among the scientists who were acquainted with each of the publications, the usage rates were very similar.

For 3 of the disciplines, the percentage of those scientists who were acquainted with the content arrangement averaged from 6 to 11 percent lower for Biological Abstracts groups than for the Bibliography. The exception was the Genetics, Husbandry, Parasitology, etc. group which was only 2 percent lower for the Abstract Journal. The percentage who used the publications for current awareness or for selecting references was about the same for Biological Abstracts as for the Bibliography. This relationship also held for those who thought the subject index an efficient method for selecting publications. An exception was the Agronomy, Husbandry group with 69 percent rating the Biological Abstract subject index an efficient tool compared with 61 percent who thought as well of the Bibliography. The percentage who had searched as many as 6 volumes of the subject index of either journal ranged from 47 to 54 percent for the 4 disciplines, with no consistent relationship between the two types of journals being recorded.

Discipline: PLANT PATHOLOGY, PLANT PHYSIOLOGY,  
BACTERIOLOGY, BOTANY

Question		"Yes" Responses	
		Bibliography of Agriculture Percent	Biological Abstracts Percent
15	See the publication	84	80
17	Acquainted with content organization	77	71
18a	Use publication for current awareness	86	83
18b	Use publication to select references	89	86
20a	Used the latest cumulative author index	26	23
20b	Used the latest annual subject index	66	66
20d	Annual subject index is efficient method for selecting publications	67	68
20e	Searched 6 volumes on one problem (Subject indexes)	51	49

Note: Percentage for Question 15 and 17 based on total responses to "see" for either publication. Percentages for other questions based on "yes" responses to "acquainted" for each publication.

Discipline: ENTOMOLOGY, NEMATOLOGY

Question		"Yes" Responses	
		Bibliography of Agriculture Percent	Biological Abstracts Percent
15	See the publication	85	75
17	Acquainted with content organization	80	69
18a	Use publication for current awareness	80	73
18b	Use publication to select references	85	84
20a	Used the latest cumulative author index	27	27
20b	Used the latest annual subject index	63	65
20d	Annual subject index is efficient method for selecting publications	66	63
20e	Searched 6 volumes on one problem (Subject indexes)	51	47

Note: Percentage for Question 15 and 17 based on total responses to "see" for either publication. Percentages for other questions based on "yes" responses to "acquainted" for each publication.

Discipline: AGRONOMY, HORTICULTURE

Question		"Yes" Responses	
		Bibliography of Agriculture Percent	Biological Abstracts Percent
15	See the publication	80	81
17	Acquainted with content organization	78	67
18a	Use publication for current awareness	80	73
18b	Use publication to select references	85	83
20a	Used the latest cumulative author index	15	17
20b	Used the latest annual subject index	56	57
20d	Annual subject index is efficient method for selecting publications	61	69
20e	Searched 6 volumes on one problem (Subject indexes)	46	54

Note: Percentage for Question 15 and 17 based on total responses to "see" for either publication. Percentages for other questions based on "yes" responses to "acquainted" for each publication.



Discipline: GENETICS, HUSBANDRY,  
PARASITOLOGY, ETC.

Question		"Yes" Responses	
		Bibliography of Agriculture	Biological Abstracts
		Percent	Percent
15	See the publication	84	84
17	Acquainted with content organization	80	78
18a	Use publication for current awareness	78	90
20a	Used the latest cumulative author index	22	21
20b	Used the latest annual subject index	65	59
20d	Annual subject index is efficient method for selecting publication	70	69
20e	Searched 6 volumes on one problem (Subject indexes)	48	54

Note: Percentage for Question 15 and 17 based on total responses to "see" for either publication. Percentages for other questions based on "yes" responses to "acquainted" for each publication.

Discipline: SOIL SCIENCE, GEOLOGY

Question		"Yes" Responses	
		Bibliography of Agriculture	Biological Abstracts
		Percent	Percent
15	See the publication	83	56
17	Acquainted with content	73	44
18a	Use publication for current awareness	57	-
18b	Use publication to select references	77	-
20a	Used the latest cumulative author index	10	-
20b	Used the latest annual subject index	43	-
20d	Annual subject index is efficient method for selecting publication	57	-
20e	Searched 6 volumes on one problem (Subject indexes)	40	-

Note: Percentage for Question 15 and 17 based on total responses to "see" for either publication. Percentages for other questions based on "yes" responses to "acquainted" for each publication.

Discipline: ALL REPORTS

Question		"Yes" Responses	
		Bibliography of Agriculture	Biological Abstracts
		Percent	Percent
15	See the publication	71	58
17	Acquainted with content organization	60	46
18a	Use publications for current awareness	75	79
18b	Use publication to select references	83	82
20a	Used the latest cumulative author index	19	19
20b	Used the latest annual subject index	54	53
20d	Annual subject index is efficient method for selecting publication	61	59
20e	Searched 6 volumes on one problem (Subject indexes)	39	42

Note: Percentage for Question 15 and 17 based on total responses to "see" for either publication. Percentages for other questions based on "yes" responses to "acquainted" for each publication.

## Question 23

Published abstracts or bibliographies reported to be of equal or greater value to research scientists than Bibliography of Agriculture and Biological Abstracts.

Listed by Rank

	No. of Times Cited		No. of Times Cited
Chemical Abstracts	154	Index to the Lit. of Amer. Econ. Entomology	3
Forestry Abstracts	73	Inst. of Paper Chemistry, Bibliographic Series	3
Review of Applied Mycology	41	Journal of Farm Economics	3
Plant Breeding Abstracts	27	U.S. Government Research Reports	3
Chemical Titles	20	Agricultural and Horticultural Engineering Abs.	2
Review of Applied Entomology	19	American Economic Review	2
Current Contents	17	Annual Review of Entomology	2
Soils and Fertilizers	16	Bibliography of North American Geology	2
Nutrition Abstracts and Reviews	15	Biochemical Journal	2
Horticultural Abstracts	12	Botanical Abstracts	2
Meteorological and Geostrophysical Abstracts	11	Building Science Abstracts	2
Zoological Record	11	Dissertation Abstracts	2
ARS Abstracts on Soil and Water Conservation	10	Entomophaga	2
Journal of the Textile Institute	10	Farm Economics (Cornell University)	2
Engineering Index	9	Index-Catalogue of Medical and Veterinary Zoology	2
Herbage Abstracts	9	Industrial Arts Index	2
Weed Abstracts	9	Journal of Dairy Science	2
Journal of the American Oil Chemists' Society	8	Journal of the Science of Food and Agriculture	2
Index Medicus	7	Journal of the Society of Kyers and Colourists	2
Agricultural Index	6	Natl. Paint, Varnish & Lacquer Assoc., Abs. Rev.	2
Analytical Abstracts	6	Natural and Synthetic Fibers Abstract Service	2
Dairy Science Abstracts	6	Nuclear Science Abstracts	2
Helminthological Abstracts	6	Public Affairs Information Service	2
Animal Breeding Abstracts	5	Reader's Guide	2
Biological Abstracts	5	Sociological Abstracts: Psychological Abstracts	2
Fire Research Abstracts and Reviews	5	Sugar Industry Abstracts	2
*TAPPI	5	Abstracts of the Weed Society of America	1
Agronomy Abstracts	4	Advances in Agronomy	1
Apicultural Abstracts	4	Agricultural Engineering	1
** ASTIA Technical Abstracts Bulletin	4	American Agricultural Reports	1
Chemical Reviews	4	Amer. Crystallographic Association Monograph	1
Current Chemical Papers	4	American Journal of Sociology	1
Empire Cotton Growing Review	4	American Leather Chemists' Association Journal	1
Textile Technology Digest	4	American Sociological Review	1
Veterinary Bulletin	4	Analyst	1
World Agricultural Econ. and Rural Socio. Abs.	4	Analytical Review, The	1
Annual Review of Plant Physiology	3	Bakers Digest	1
Applied Mechanics Reviews	3	Beilstein	1
*** B. A. S. I. C.	3	Bibliographie des Forst Und Holzwiets	
Bibliography of Papermaking	3	Haftlichen Schrifftums	1
Chemisches Zentralblatt	3	Bibliography of Agricultural Bioclimatology	1
Index Chemicus	3	Bibliography of Agricultural Meteorology	1

\*Technical Association of Pulp and Paper Industry

\*\*Armed Services Technical Information Agency

\*\*\*Biological Abstracts Subjects in Content



Listed By Rank	No. of Times Cited		No. of Times Cited
Bibliography of Birds	1	Journal of Applied Chemistry	1
Book Review Digest	1	Journal of Economic Entomology	1
Books in Print	1	Journal of Endocrinology	1
Cereal Science Today	1	Land Economics	1
Chemical and Engineering News, The	1	Microchemical Journal	1
Australia, CSIRO, Building Information	1	Monthly Catalog of U.S. Gov't. Publications	1
Current Lit. in Traffic and Transportation	1	Monthly Checklist of State Publications	1
Current Sociology	1	Nat'l. Opinion Research Center Bibliography	1
Digest of Agricultural Economics	1	National Union Catalog	1
Econometrica	1	Newsweek	1
Economic Development and Cultural Change	1	ORRC Commission Reports	1
Economic Research Serv. Checklist of Reports	1	Physiological Reviews	1
Food Science Abstracts	1	Prevention of Deterioration Abstracts	1
Food Technology	1	Publisher's Weekly	1
Forest Products Journal	1	Regrigeration	1
Forest Products Laboratory Publication Lists	1	Soil Science	1
Forstliche Umschau	1	Stain Technology	1
Gas Chromatography	1	Statistical Abstracts of the U. S.	1
Genetics	1	Sugar Journal	1
Heating, Air Conditioning, and Ventilation	1	Taxonomic Index	1
Index of Current Research on Pigs	1	Tissue Culture Bibliography	1
Index to the Economic Journals	1	TMM Research Review	1
Index Veterinaricus	1	Tobacco Abstracts	1
Indian Cotton Growing Review	1	Tropical Abstracts	1
Instrumentation	1	Weeds	1
Journal of Agricultural Science	1	Wildlife Abstracts	1
Journal of American Statistical Association	1	Wildlife Review	1

#### ALPHABETICAL LISTING

Abstracts of the Weed Society of America	1	Beilstein	1
Advances in Agronomy	1	Bibliographie des Forst Und Holzwiets	
Agricultural Engineering	1	Haftlichen Schrifttums	1
Agricultural and Horticultural Engin. Abs.	2	Bibliography of Agricultural Bioclimatology	1
Agricultural Index	6	Bibliography of Agricultural Meteorology	1
Agronomy Abstracts	4	Bibliography of Birds	1
American Agricultural Reports	1	Bibliography of North American Geology	2
Amer. Crystallographic Assoc. Monograph	1	Bibliography of Papermaking	3
American Economic Review	2	Biochemical Journal	2
American Journal of Sociology	1	Biological Abstracts	5
American Leather Chemists Assoc. Journal	1	Book Review Digest	1
American Sociological Review	1	Botanical Abstracts	2
Analyst	1	Books in Print	1
Analytical Abstracts	6	Building Science Abstracts	2
Analytical Review, The	1	Cereal Science Today	1
Animal Breeding Abstracts	5	Chemical Abstracts	154
Annual Review of Entomology	2	Chemical and Engineering News, The	1
Annual Review of Plant Physiology	3	Chemical Reviews	4
Apicultural Abstracts	4	Australia, CSIRO, Building Information	1
Applied Mechanics Reviews	3	Chemical Titles	20
Applied Science and Technology Index	1	Chemisches Zentralblatt	3
ARS Abstracts on Soil and Water Conservation	10	Current Chemical Papers	4
*ASTIA Technical Abstracts Bulletin	4	Current Contents	17
Bakers Digest	1	Current Lit. in Traffic and Transportation	1
**B. A. S. I. C.	3	Current Sociology	1

\* Armed Services Technical Information Agency

\*\* Biological Abstracts Subjects in Content

	No. of Times Cited		No. of Times Cited
Dairy Science Abstracts	6	Journal of the Textile Institute	10
Digest of Agricultural Economics	1	Land Economics	1
Dissertation Abstracts	2	Meteorological and Geostrophysical Abs.	11
Econometrica	1	Microchemical Journal	1
Economic Development and Cultural Change	1	Monthly Catalog of U. S. Gov't. Publications	1
Economic Research Serv. Checklist of Reports	1	Monthly Checklist of State Publications	1
Empire Cotton Growing Review	4	Nat'l. Paint, Varnish and Lacquer Assoc. Abs. Rev.	2
Engineering Index	9	Nat'l. Opinion Research Center Bibliography	1
Entomophaga	2	National Union Catalog	1
Farm Economics (Cornell University)	2	Natural and Synthetic Fibers Abstract Service	2
Fire Research Abstracts and Reviews	5	Newsweek	1
Food Science Abstracts	1	Nuclear Science Abstracts	2
Food Technology	1	Nutrition Abstracts and Reviews	15
Forest Products Journal	1	ORRRC Commission Reports	1
Forest Products Laboratory Publication Lists	1	Physiological Reviews	1
Forestry Abstracts	73	Plant Breeding Abstracts	27
Forstliche Umschau	1	Prevention of Deterioration Abstracts	1
Gas Chromatography	1	Public Affairs Information Service	2
Genetics	1	Publisher's Weekly	1
Heating, Air Conditioning, and Ventilation	1	Reader's Guide	2
Helminthological Abstracts	6	Refrigeration	1
Herbage Abstracts	9	Review of Applied Entomology	19
Horticultural Abstracts	12	Review of Applied Mycology	41
Index-Catalogue of Medical and Veterinary Zoology	2	Sociological Abstracts: Psychological Abstracts	2
Index Chemicus	3	Soils and Fertilizers	16
Index of Current Research on Pigs	1	Soil Science	1
Index to the Economic Journals	1	Stain Technology	1
Index to the Literature of Amer. Econ. Entomology	3	Statistical Abstracts of the U. S.	1
Index Medicus	7	Sugar Industry Abstracts	2
Index Veterinaricus	1	Sugar Journal	1
Indian Cotton Growing Review	1	*TAPPI	5
Industrial Arts Index	2	Taxonomic Index	1
Institute of Paper Chemistry, Bibliographic Series	3	Textile Technology	4
Instrumentation	1	Tissue Culture Bibliography	1
Journal of Agricultural Science	1	TMM Research Review	1
Journal of the Amer. Oil Chemists' Society	8	Tobacco Abstracts	1
Journal of American Statistical Association	1	Tropical Abstracts	1
Journal of Dairy Science	2	U. S. Government Research Reports	3
Journal of Economic Entomology	1	Veterinary Bulletin	4
Journal of Endocrinology	1	Weed Abstracts	9
Journal of Farm Economics	3	Weeds	1
Journal of the Science of Food and Agriculture	2	Wildlife Abstracts	1
Journal of the Society of Dyers and Colourists	2	Wildlife Review	1
		World Agricultural Econ. & Rural Sociol. Abs.	4
		Zoological Record	11
		* Technical Association of Pulp and Paper Industry	

List of items reported that could not be classified or identified:

Annual Reviews	1	Legal Periodicals (Indices)	1
Bibliography from Serial Research	1	Library List #68 "The Econ. of Farm Mech. in U. S.	2
British Abstracts	3	Medical Abstracts	1
Defense Agency Lists	1	Nursery and Seed Catalogs	1
FED: USDA and Experiment Station Publications	4	Recent Acquisitions (N. W. University)	1
Forest and Range Management	1	Recent Advances Series	1
General Foods Abstracts	1	Select. Bib. of Thesis & Res. in Family Econ.	1
Index of Business School Journal	1	Transportation of Agric. Commodities in the U. S.	1
		Uniterm	1



## SUMMARY OF INQUIRY ON LIBRARY SERVICES WHICH PROVIDE ACCESS TO SCIENTIFIC AND TECHNICAL PUBLICATIONS

Number that answered yes, no, or did not answer, by grade and area

	G. S. Grade	F I E L D				D. C. -BELTSVILLE				TOTAL AREAS			
		ANSWERED			Not Ans.	ANSWERED			Not Ans.	ANSWERED			Not Ans.
		Yes	No	Total		Yes	No	Total		Yes	No	Total	
3. FACILITIES: Are the following facilities for getting information needed in your re-search programs available to you ?													
A. Personal library and reprint file	7-11	260	20	280	4	50	11	61	1	310	31	341	5
	12 +	285	14	299	0	111	8	119	0	396	22	418	0
	<u>Total</u>	545	34	579	4	161	19	180	1	706	53	759	5
B. Literature purchased or owned by your agency and immediately available to you	7-11	258	23	281	3	59	3	62	0	317	26	343	3
	12 +	271	27	298	1	114	4	118	1	385	31	416	2
	<u>Total</u>	529	50	579	4	173	7	180	1	702	57	759	5
C. University or other non-USDA research library	7-11	229	51	280	4	43	16	59	3	272	67	339	7
	12 +	251	47	298	1	63	50	113	6	314	97	411	7
	<u>Total</u>	480	98	578	5	106	66	172	9	586	164	750	14
D. National Agricultural Library, D.C., (including Belts. & Bee Cult. Library	7-11	183	73	256	28	61	0	61	1	244	73	317	29
	12 +	208	70	278	21	116	0	116	3	324	70	394	24
	<u>Total</u>	391	143	534	49	177	0	177	4	568	143	711	53
E. USDA agency field library	7-11	122	122	244	40	18	37	55	7	140	159	299	47
	12 +	138	135	273	26	11	81	92	27	149	216	365	53
	<u>Total</u>	260	257	517	66	29	118	147	34	289	375	664	100
4. LIBRARY SERVICES: Indicate whether the listed services are or are not available at a library close to where you work													
A. Lending books	7-11	258	4	262	22	62	0	62	0	320	4	324	22
	12 +	264	13	277	22	118	0	118	1	382	13	395	23
	<u>Total</u>	522	17	539	44	180	0	180	1	702	17	719	45
B. Lending periodicals (1) on specific request	7-11	243	14	257	27	62	0	62	0	305	14	319	27
	12 +	250	24	274	25	115	0	115	4	365	24	389	29
	<u>Total</u>	493	38	531	52	177	0	177	4	670	38	708	56
(2) by scheduled routing	7-11	153	81	234	50	39	18	57	5	192	99	291	55
	12 +	154	104	258	41	79	32	111	8	233	136	369	49
	<u>Total</u>	307	185	492	91	118	50	168	13	425	235	660	104
C. Furnishing access to published indexes and bibliographies	7-11	244	14	258	26	58	0	58	4	302	14	316	30
	12 +	256	16	272	27	109	0	109	10	365	16	381	37
	<u>Total</u>	500	30	530	53	167	0	167	14	667	30	697	67
D. Compiling special bibliographies	7-11	68	154	222	62	27	12	39	23	95	166	261	85
	12 +	65	195	260	39	53	30	83	36	118	225	343	75
	<u>Total</u>	133	349	482	101	80	42	122	59	213	391	604	160
E. Supplying reproductions to public (1) Direct reading size	7-11	166	73	239	45	41	8	49	13	207	81	288	58
	12 +	170	89	259	40	78	16	94	25	248	105	353	65
	<u>Total</u>	336	162	498	85	119	24	143	38	455	186	641	123

		F I E L D				D. C. -BELTSVILLE				TOTAL AREAS			
		G. S.	ANSWERED			Not	ANSWERED			Not	ANSWERED		
		Grade	Yes	No	Total	Ans.	Yes	No	Total	Ans.	Yes	No	Total
E.	Supply reproductions to public (2) Micro form	7-11	119	100	219	65	31	8	39	23	150	108	258
		12 +	121	117	238	61	59	23	82	37	180	140	320
		<u>Total</u>	240	217	457	126	90	31	121	60	330	248	578
F.	Supply reproductions of tables of contents of periodicals	7-11	101	129	230	54	23	15	38	24	124	144	268
		12 +	104	150	254	45	43	33	76	43	147	183	330
		<u>Total</u>	205	279	484	99	66	48	114	67	271	327	598
G.	Furnishing reference help	7-11	197	45	242	42	56	3	59	3	253	48	301
		12 +	201	68	269	30	101	5	106	13	302	73	375
		<u>Total</u>	398	113	511	72	157	8	165	16	555	121	676
H.	Furnishing access to library card catalog	7-11	242	13	255	29	61	0	61	1	303	13	316
		12 +	255	13	268	31	112	0	112	7	367	13	380
		<u>Total</u>	497	26	523	60	173	0	173	8	670	26	696
I.	Furnishing library catalog in printed form	7-11	44	174	218	66	17	21	38	24	61	195	256
		12 +	43	208	251	48	26	43	69	50	69	251	320
		<u>Total</u>	87	382	469	114	43	64	107	74	130	446	576
J.	Furnishing lists of newly received books and periodicals	7-11	176	74	250	34	42	10	52	10	218	84	302
		12 +	185	81	266	33	71	25	96	23	256	106	362
		<u>Total</u>	361	155	516	67	113	35	148	33	474	190	664
K.	Abstracting	7-11	31	197	228	56	15	20	35	27	46	217	263
		12 +	28	230	258	41	23	54	77	42	51	284	335
		<u>Total</u>	59	427	486	97	38	74	112	69	97	501	598
L.	Translating	7-11	46	181	227	57	13	18	31	31	59	199	258
		12 +	48	217	265	34	23	50	73	46	71	267	338
		<u>Total</u>	94	398	492	91	36	68	104	77	130	466	596
6.	Do you or does your agency make an effort to maintain a special bibliography or card catalog or a similar aid to keep you informed in your scientific specialty ?	7-11	194	85	279	5	29	30	59	3	223	115	338
		12 +	197	97	294	5	71	46	117	2	268	143	411
		<u>Total</u>	391	182	573	10	100	76	176	5	491	258	749
7.	Do you or does your agency distribute this aid to workers at locations in other geographical areas ?	7-11	60	113	173	21	9	19	28	1	69	132	201
		12 +	57	121	178	19	25	42	67	4	82	163	245
		<u>Total</u>	117	234	351	40	34	61	95	5	151	295	446
8A.	If yes, is it supplied only at the request of those other workers ?	7-11	24	30	54	6	6	2	8	1	30	32	62
		12 +	18	36	54	3	10	15	25	0	28	51	79
		<u>Total</u>	42	66	108	9	16	17	33	1	58	83	141
9.	Do you know about key word in context title indexes such as are now supplied by Biol. Abstracts ?	7-11	137	138	275	9	28	31	59	3	165	169	334
		12 +	179	108	287	12	56	59	115	4	235	167	402
		<u>Total</u>	316	246	562	21	84	90	174	7	400	336	736
10.	If yes, have you used an issue to identify literature that would have a likely pertinence to your research ?	7-11	84	52	136	1	16	12	28	0	100	64	164
		12 +	118	59	177	2	39	16	55	1	157	75	232
		<u>Total</u>	202	111	313	3	55	28	83	1	257	139	396



	G. S. Grade	F I E L D				D. C. -BELTSVILLE				TOTAL AREAS			
		ANSWERED			Not	ANSWERED			Not	ANSWERED			Not
		Yes	No	Total	Ans.	Yes	No	Total	Ans.	Yes	No	Total	Ans.
11. If yes, did you find a reference to any pertinent literature the last time you used an issue ?	7-11	61	22	83	1	14	2	16	0	75	24	99	1
	12 +	86	26	112	6	26	9	35	4	112	35	147	10
	<u>Total</u>	147	48	195	7	40	11	51	4	187	59	246	11
12. Can you recall of one instance in the last two years when, after you had started a piece of research, you discovered that the work or a significant part of it had already been done ?	7-11	53	222	275	9	9	48	57	5	62	270	332	14
	12 +	50	240	290	9	13	100	113	6	63	340	403	15
	<u>Total</u>	103	462	565	18	22	148	170	11	125	610	735	29
13. Did you drop that line of research to avoid duplication?	7-11	18	32	50	3	5	4	9	0	23	36	59	3
	12 +	18	30	48	2	6	6	12	1	24	36	60	3
	<u>Total</u>	36	62	98	5	11	10	21	1	47	72	119	6
<u>BIBLIOGRAPHY OF AGRICULTURE</u>													
15. Do you see issues of this publication	7-11	194	84	278	6	44	18	62	0	238	102	340	6
	12 +	202	88	290	9	95	24	119	0	297	112	409	9
	<u>Total</u>	396	172	568	15	139	42	181	0	535	214	749	15
16. If yes, are they:	7-11	3				1				4			
A. A personal set	12 +	10				5				15			
	<u>Total</u>	13				6				19			
B. Circulated to you ?	7-11	85				20				105			
	12 +	74				41				115			
	<u>Total</u>	159				61				220			
C. Available in your building ?	7-11	113				30				143			
	12 +	118				62				180			
	<u>Total</u>	231				92				323			
D. Available in library close to where you work but <u>not</u> in your building ?	7-11	76				19				95			
	12 +	73				23				96			
	<u>Total</u>	149				42				191			
17. Do you see issues of this publication often enough so that you are acquainted with the organization of their contents ?	7-11	160	33	193	1	35	8	43	1	195	41	236	2
	12 +	180	18	198	4	82	12	94	1	262	30	292	5
	<u>Total</u>	340	51	391	5	117	20	137	2	457	71	528	7
18. Is your use of this publication: A. To keep aware of results of current research	7-11	114	29	143	17	31	3	34	1	145	32	177	18
	12 +	133	25	158	21	66	10	76	6	199	35	234	27
	<u>Total</u>	247	54	301	38	97	13	110	7	344	67	411	45
19. We need to know your opinion of the adequacy with which literature in one of your areas of special competence is covered in the publication:													
A. Does coverage of literature published in <u>English</u> seem adequate ?	7-11	130	17	147	13	28	5	33	2	158	22	180	15
	12 +	138	26	164	15	65	11	76	6	203	37	240	21
	<u>Total</u>	268	43	311	28	93	16	109	8	361	59	420	36

	G. S. Grade	F I E L D				D. C. -BELTSTVILLE				TOTAL AREAS			
		ANSWERED			Not	ANSWERED			Not	ANSWERED			Not
		Yes	No	Total	Ans.	Yes	No	Total	Ans.	Yes	No	Total	Ans.
19. (Continued)													
B. Does coverage of literature published in foreign languages seem adequate ?	7-11	88	37	125	35	16	9	24	10	104	46	150	45
	12 +	105	42	147	32	48	13	61	21	153	55	208	53
	<u>Total</u>	193	79	272	67	64	22	86	31	257	101	358	98
C. Does coverage include too many references ?	7-11	16	124	140	20	1	30	31	4	17	154	171	24
	12 +	22	131	153	26	14	56	70	12	36	187	223	38
	<u>Total</u>	38	255	293	46	15	86	101	16	53	341	394	62
20. Following publication of each volume there is issued a cumulative author index and a subject index:													
A. Did you use the latest cumulative author index to assemble references by chosen authors which contained information pertinent to a problem in scientific area specified ?	7-11	30	120	150	10	9	24	33	2	39	144	183	12
	12 +	29	135	164	15	17	60	77	5	46	195	241	20
	<u>Total</u>	59	255	314	25	26	84	110	7	85	339	424	32
B. Did you use the latest annual subject index to assemble references such as those referred to above ?	7-11	89	65	154	6	24	9	33	2	113	74	187	8
	12 +	90	73	163	16	43	35	78	4	133	108	241	20
	<u>Total</u>	179	138	317	22	67	44	111	6	246	182	428	28
C. If yes, did you get references to publications that contained less specific information than you wanted ?	7-11	57	29	86	3	16	8	24	0	73	37	110	3
	12 +	70	19	89	1	28	13	41	2	98	32	130	3
	<u>Total</u>	127	48	175	4	44	21	65	2	171	69	240	6
D. Does the annual subject index seem to represent an efficient method by which you may determine which publications you should get ?	7-11	109	23	132	28	26	7	33	2	135	30	165	30
	12 +	94	40	134	45	48	11	59	23	142	51	193	68
	<u>Total</u>	203	63	266	73	74	18	92	25	277	81	358	98
E. In the past year did you make a comprehensive search of the subject indexes of as many as 6 volumes for access to information on any one official research problem ?	7-11	66	87	153	7	18	15	33	2	84	102	186	9
	12 +	57	106	163	16	35	45	80	2	92	151	243	18
	<u>Total</u>	123	193	316	23	53	60	113	4	176	253	429	27
<u>BIOLOGICAL ABSTRACTS</u>													
15. Do you see issues of this publication ?	7-11	182	89	271	13	28	26	54	8	210	115	325	21
	12 +	183	104	287	12	48	58	106	13	231	162	393	25
	<u>Total</u>	365	193	558	25	76	84	160	21	441	277	718	46
16. If yes, are they:													
A. A personal set	7-11	3				1				4			
	12 +	10				7				17			
	<u>Total</u>	13				8				21			
B. Circulated to you ?	7-11	63				7				70			
	12 +	66				12				78			
	<u>Total</u>	129				19				148			



	F I E L D					D. C. -BELTSVILLE				TOTAL AREAS			
	G. S.	ANSWERED			Not	ANSWERED			Not	ANSWERED			Not
	Grade	Yes	No	Total	Ans.	Yes	No	Total	Ans.	Yes	No	Total	Ans.
16. (Continued)													
C. Available in your building ?	7-11	95				15				110			
	12 +	98				20				118			
	<u>Total</u>	193				35				228			
D. Available in library close to hwere you work, but <u>not</u> in your building ?	7-11	76				11				87			
	12 +	72				20				92			
	<u>Total</u>	148				31				179			
17. Do you see issues of this publication often enough so that you are acquainted with their contents ?	7-11	136	43	179	3	23	3	26	2	159	46	205	5
	12 +	154	26	180	3	37	10	47	1	191	36	227	4
	<u>Total</u>	290	69	359	6	60	13	73	3	350	82	432	9
18. Is your use of this publication: A. To keep aware of current research ?	7-11	100	23	123	13	19	1	20	3	119	24	143	16
	12 +	126	11	137	17	32	4	36	0	158	15	173	18
	<u>Total</u>	226	34	260	30	51	5	56	3	277	39	316	34
B. To select literature references when you are reviewing what has been done on a problem in your scientific field ?	7-11	114	14	128	8	18	1	19	4	132	15	147	12
	12 +	121	9	130	24	33	4	37	0	154	13	167	24
	<u>Total</u>	235	23	258	32	51	5	56	4	286	28	314	36
19 We need to know your opinion of the adequacy with which literature in one of your areas of special competence is covered in the publication ?													
A. Does coverage of literature published in English seem adequate ?	7-11	110	13	123	13	18	2	20	3	128	15	143	16
	12 +	110	29	139	14	29	7	36	1	139	36	175	15
	<u>Total</u>	220	42	262	27	47	9	56	4	267	51	318	31
B. Does coverage of literature published in foreign languages seem adequate ?	7-11	67	33	100	36	12	5	17	6	79	38	117	42
	12 +	75	46	121	32	20	10	30	7	95	56	151	39
	<u>Total</u>	142	79	221	68	32	15	47	13	174	94	268	81
C. Does coverage include too many references ?	7-11	11	109	120	16	0	18	18	5	11	127	138	21
	12 +	9	121	130	23	1	32	33	4	10	153	163	27
	<u>Total</u>	20	230	250	39	1	50	51	9	21	280	301	48
20. Following publication of each volume there is issued a cumulative author index and a subject index:													
A. Did you use the latest cumulative author index to assemble references by chosen authors which contained information pertinent to a problem in scientific area specified ?	7-11	26	101	127	9	8	14	22	1	34	115	149	10
	12 +	26	116	142	11	7	29	36	1	33	145	178	12
	<u>Total</u>	52	217	269	20	15	43	58	2	67	260	327	22
B. Did you use the latest annual subject index to assemble references such as those referred to above?	7-11	73	56	129	7	15	7	22	1	88	63	151	8
	12 +	78	62	140	13	19	18	37	0	97	80	177	13
	<u>Total</u>	151	118	269	20	34	25	59	1	185	143	328	21
C. If yes, did you get references to publications that contained less specific information than you wanted ?	7-11	44	28	72	1	11	4	15	0	55	32	87	1
	12 +	62	15	77	1	10	6	16	3	72	21	93	4
	<u>Total</u>	106	43	149	2	21	10	31	3	127	53	180	5

	G. S. Grade	FIELD				D. C. -BELTSVILLE				TOTAL AREAS			
		ANSWERED			Not	ANSWERED			Not	ANSWERED			Not
		Yes	No	Total	Ans.	Yes	No	Total	Ans.	Yes	No	Total	Ans.
20 (Continued)													
D. Does the annual subject index seem to represent an efficient method by which you may determine which publications you should get ?	7-11	83	27	110	26	17	4	21	2	100	31	131	28
	12 +	88	28	116	37	20	8	28	9	108	36	144	46
	<u>Total</u>	171	55	226	63	37	12	49	11	208	67	275	74
E. In the past year did you make a comprehensive search of the subject indexes of as many as 6 volumes for access to information on any one official research problem ?	7-11	57	73	130	6	13	9	22	1	70	82	152	7
	12 +	59	76	135	18	17	20	37	0	76	96	172	18
	<u>Total</u>	116	149	265	24	30	29	59	1	146	178	324	25
23. Are there published abstracts or bibliographies that are of equal or greater value to you than the Bibliography of Agriculture or Biological Abstracts ?	7-11	162	63	225	59	29	18	47	15	191	81	272	74
	12 +	192	56	248	51	61	32	93	26	253	88	341	77
	<u>Total</u>	354	119	473	110	90	50	140	41	444	169	613	151

# SUMMARY OF INQUIRY ON LIBRARY SERVICES WHICH PROVIDE ACCESS TO SCIENTIFIC AND TECHNICAL PUBLICATIONS

## Response Rate and Percent that Answered Yes or No, by Grade and Area

	G. S. Grade	Response Rate 1/				Percent of Total Response 2/					
		Total			FIELD	D. C. -BELTS.		TOTAL AREAS		Yes	No
		Field	DC-Belts.	Areas		Yes	No	Yes	No		
		Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
3. FACILITIES:											
Are the following facilities for getting information needed in your research programs available to you ?	7-11	(284	62	346)	Total Number of questionnaires tabulated						
	12 +	(299	119	418)							
	<u>Total</u>	(583	181	764)							
A. Personal Library and reprint file	7-11	98.6	98.4	98.6	92.9	7.1	82.0	18.0	90.9	9.1	
	12 +	100.0	100.0	100.0	95.3	4.7	93.3	6.7	94.7	5.3	
	<u>Total</u>	99.3	99.4	99.3	94.1	5.9	89.4	10.6	93.0	7.0	
B. Literature purchased or owned by your agency and immediately available to you?	7-11	98.9	100.0	99.1	91.8	8.2	95.2	4.8	92.4	7.6	
	12 +	99.7	99.2	99.5	90.9	9.1	96.6	3.4	92.5	7.5	
	<u>Total</u>	99.3	99.4	99.3	91.4	8.6	96.1	3.9	92.5	7.5	
C. University or other non-USDA research Library ?	7-11	98.6	95.2	98.0	81.8	18.2	72.9	27.1	80.2	19.8	
	12 +	99.7	95.0	98.3	84.2	15.8	55.8	44.2	76.4	23.6	
	<u>Total</u>	99.1	95.0	98.2	83.0	17.0	61.6	38.4	78.1	21.9	
D. National Agricultural Library, D. C. (including Beltsville and Bee Culture Library)	7-11	90.1	98.4	91.6	71.5	28.5	100.0	0	77.0	23.0	
	12 +	93.0	97.5	94.3	74.8	25.2	100.0	0	82.2	17.8	
	<u>Total</u>	91.6	97.8	93.1	73.2	26.8	100.0	0	79.9	20.1	
E. USDA agency field library	7-11	85.9	88.7	86.4	50.0	50.0	32.7	67.3	46.8	53.2	
	12 +	91.3	77.3	87.3	50.5	49.5	12.0	88.0	40.8	59.2	

1/ Number that answered each question as a percent of total number of questionnaires tabulated, except for related questions

2/ For each area the percent "yes" plus the percent "no" equals 100 percent



#### 4. LIBRARY SERVICES:

Indicate whether the listed services are or are not available at a library close to where you work

Response Rate				Percent of Total Response					
G. S. Grade	Field Percent	DC-Belts. Percent	Total Areas Percent	FIELD		D. C. -BELTS.		TOTAL AREAS	
			Yes Percent	No Percent	Yes Percent	No Percent	Yes Percent	No Percent	
7-11	92.3	100.0	93.6	98.5	1.5	100.0	0	98.8	1.2
12 +	92.6	99.2	94.5	95.3	4.7	100.0	0	96.7	3.3
<u>Total</u>	92.5	99.4	94.1	96.8	3.2	100.0	0	97.6	2.4
7-11	90.5	100.0	92.2	94.6	5.4	100.0	0	95.6	4.4
12 +	91.6	96.6	93.1	91.2	8.8	100.0	0	93.8	6.2
<u>Total</u>	91.1	97.8	92.7	92.8	7.2	100.0	0	94.6	5.4
7-11	82.4	91.9	84.1	65.4	34.6	68.4	31.6	66.0	34.0
12 +	86.3	93.3	88.3	59.7	40.3	70.5	29.5	63.1	36.9
<u>Total</u>	84.4	92.8	86.4	62.4	37.6	69.8	30.2	64.4	35.6
7-11	90.8	93.5	91.3	62.4	5.4	100.0	0	95.6	4.4
12 +	91.0	91.6	91.1	94.1	5.9	100.0	0	95.8	4.2
<u>Total</u>	90.9	92.3	91.2	94.3	5.7	100.0	0	95.7	4.3
7-11	78.2	62.9	75.4	30.6	69.4	69.2	30.8	36.4	63.6
12 +	87.0	69.7	82.1	25.0	75.0	63.9	36.1	34.4	65.6
<u>Total</u>	82.7	67.4	79.1	27.6	72.4	65.6	34.4	35.3	64.7
7-11	84.2	79.0	83.2	69.5	30.5	83.7	16.3	71.9	28.1
12 +	86.6	79.0	84.4	65.6	34.4	83.0	17.0	70.3	29.7
<u>Total</u>	85.4	79.0	83.9	67.5	32.5	83.2	16.8	71.0	29.0
7-11	77.1	62.9	74.6	54.3	45.7	79.5	20.5	58.1	41.9
12 +	79.6	68.9	76.6	50.8	49.2	72.0	28.0	56.2	43.8
<u>Total</u>	78.4	66.9	75.7	52.5	47.5	74.4	25.6	57.1	42.9
7-11	81.0	61.3	77.5	43.9	56.1	60.5	39.5	46.3	53.7
12 +	85.0	63.9	78.9	40.9	59.1	56.6	43.4	44.5	55.5
<u>Total</u>	83.0	63.0	78.3	42.4	57.6	57.9	42.1	45.3	54.7
7-11	85.2	95.2	87.0	81.4	18.6	94.9	5.1	84.1	15.9
12 +	90.0	89.1	89.7	74.7	25.3	95.3	4.7	80.5	19.5
<u>Total</u>	87.7	91.2	88.5	77.9	22.1	95.2	4.8	82.1	17.9
7-11	89.8	98.4	91.3	94.9	5.1	100.0	0	95.9	4.1
12 +	89.6	94.1	90.9	95.1	4.9	100.0	0	96.6	3.4
<u>Total</u>	89.7	95.6	91.1	95.0	5.0	100.0	0	96.3	3.7
7-11	76.8	61.3	74.0	20.2	79.8	44.7	55.3	23.8	76.2
12 +	83.9	58.0	76.6	17.1	82.9	37.7	62.3	21.6	78.4
<u>Total</u>	80.4	59.1	75.4	18.6	81.4	40.2	59.8	22.6	77.4
7-11	88.0	83.9	87.3	70.4	29.6	80.8	19.2	72.2	27.8
12 +	89.0	80.7	86.6	69.5	30.5	74.0	26.0	70.7	29.3
<u>Total</u>	88.5	81.8	86.9	70.0	30.0	76.4	23.6	71.4	28.6
7-11	80.3	56.5	76.0	13.6	86.4	42.9	57.1	17.5	82.5
12 +	86.3	64.7	80.1	10.9	89.1	29.9	70.1	15.2	84.8
<u>Total</u>	83.4	61.9	78.3	12.1	87.9	33.9	66.1	16.2	83.8

	Response Rate			Percent of Total Response						
	G. S. Grade	Field Percent	DC-Belts. Percent	Total	FIELD		D. C. -BELTS.		TOTAL AREAS	
				Areas	Yes	No	Yes	No	Yes	No
				Percent	Percent	Percent	Percent	Percent	Percent	Percent
4 (Continued)										
L. Translating	7-11	79.9	50.0	74.6	20.3	79.7	41.9	58.1	22.9	77.1
	12 +	88.6	61.3	80.9	18.1	81.9	31.5	68.5	21.0	79.1
	<u>Total</u>	84.4	57.5	78.0	19.1	80.9	34.6	65.4	21.8	78.2
6. Do you or does your agency make an effort to maintain a special bibliography or card catalog or a similar aid to keep you informed in your scientific specialty ?	7-11	98.2	95.2	97.7	69.5	30.5	49.2	50.8	66.0	34.0
	12 +	98.3	98.3	98.3	67.0	33.0	60.7	39.3	65.2	34.8
	<u>Total</u>	98.3	97.2	98.0	68.2	31.8	56.8	43.2	65.6	34.4
7. Do you or does your agency distribute this aid to workers at locations in other geographical areas ?	7-11	89.2	96.6	90.1	34.7	65.3	32.1	67.9	34.3	65.7
	12 +	90.4	94.4	91.4	32.0	68.0	37.3	62.7	33.5	66.5
	<u>Total</u>	89.8	95.0	90.8	33.3	66.7	35.8	64.2	33.9	66.1
8A. If yes, is it supplied only at the request of those other workers ?	7-11	90.0	88.9	89.9	44.4	55.6	75.0	25.0	48.4	51.6
	12 +	94.7	100.0	96.3	33.3	66.7	40.0	60.0	35.4	64.6
	<u>Total</u>	92.3	97.1	93.4	38.9	61.1	48.5	51.5	41.1	58.9
9. Do you know about key word in context title indexes such as are now supplied by Biol. Abs. ?	7-11	96.8	95.2	96.5	49.8	50.2	47.5	52.5	49.4	50.6
	12 +	96.0	96.6	96.2	62.4	37.6	48.7	51.3	68.5	41.5
	<u>Total</u>	96.4	96.1	96.3	56.2	43.8	48.3	51.7	54.3	45.7
10. If yes, have you used an issue to identify literature that would have a likely pertinence to your research ?	7-11	99.3	100.0	99.4	61.8	38.2	57.1	42.9	61.0	39.0
	12 +	98.9	98.2	98.7	66.7	33.3	70.9	29.1	67.7	32.3
	<u>Total</u>	99.1	98.8	99.0	64.5	35.5	66.3	33.7	64.9	35.1
11. If yes, did you find a reference to any pertinent literature the last time you used an issue?	7-11	98.8	100.0	99.0	73.5	26.5	87.5	12.5	75.8	24.2
	12 +	95.9	89.7	93.6	76.8	23.2	74.3	25.7	76.2	23.8
	<u>Total</u>	96.5	92.7	95.7	75.4	24.6	78.4	21.6	76.0	24.0
12. Can you recall of one instance in the last two years when, after you had started a piece of research, you discovered that the work or a significant part of it had already been done ?	7-11	96.0	91.9	96.0	19.3	80.7	15.8	84.2	18.7	81.3
	12 +	97.0	95.0	96.4	17.2	82.8	11.5	88.5	15.6	84.4
	<u>Total</u>	96.9	93.9	96.2	18.2	81.8	12.9	87.1	17.0	83.0
13. Did you drop that line of research to avoid duplication ?	7-11	94.3	100.0	95.2	36.0	64.0	55.6	44.4	39.0	61.0
	12 +	96.0	92.3	95.2	37.5	62.5	50.0	50.0	40.0	60.0
	<u>Total</u>	95.1	95.5	95.2	36.7	63.3	52.4	47.6	39.5	60.5
BIBLIOGRAPHY OF AGRICULTURE										
15. Do you see issues of this publication ?	7-11	97.9	100.0	98.3	69.8	30.2	71.0	29.0	70.0	30.0
	12 +	97.0	100.0	97.8	69.7	30.3	79.8	20.2	72.6	27.4
	<u>Total</u>	97.4	100.0	98.0	69.7	30.3	76.8	23.2	71.4	28.6
16. If yes, are they										
A. A personal set	7-11				1.5		2.3		1.7	
	12 +				5.0		5.3		5.1	
	<u>Total</u>				3.3		4.3		3.6	
B. Circulated to you ?	7-11				43.8		45.5		44.1	
	12 +				36.6		43.2		38.7	
	<u>Total</u>				40.2		43.9		41.1	



	Response Rate				Percent of Total Response					
	G. S.	Field	DC-Belts.	Total	FIELD		DC-BELTS.		TOTAL AREAS	
	Grade	Percent	Percent	Percent	Yes	No	Yes	No	Yes	No
					Percent	Percent	Percent	Percent	Percent	Percent
16. (Continued)										
C. Available in your building ?	7-11				58.2		68.2		60.1	
	12 +				58.4		65.3		60.6	
	<u>Total</u>				58.3		66.2		60.4	
D. Available in library close to where you work but not in your building ?	7-11				39.2		43.2		39.9	
	12 +				36.1		24.2		32.3	
	<u>Total</u>				37.6		30.2		35.7	
17. Do you see issues of this publication often enough so that you are acquainted with the organization of their contents ?	7-11	99.5	97.7	99.2	82.9	17.1	81.4	18.6	82.6	17.4
	12 +	97.5	98.9	98.0	90.9	9.1	87.2	12.8	89.7	10.3
	<u>Total</u>	98.5	98.6	98.5	86.9	13.1	85.4	14.6	86.5	13.5
18. Is your use of this publication:										
A. To keep aware of results of current research	7-11	89.4	97.1	90.8	79.7	20.3	91.2	8.8	81.9	18.1
	12 +	88.3	92.7	89.7	84.2	15.8	86.8	13.2	85.0	15.0
	<u>Total</u>	88.8	94.0	90.1	82.1	17.9	88.2	11.8	83.7	16.3
B. To select literature references when you are reviewing what has been done on a problem in your scientific field?	7-11	91.9	94.3	92.3	91.8	8.2	90.9	9.1	91.7	8.3
	12 +	88.8	93.9	90.4	89.3	10.7	92.2	7.8	90.3	9.7
	<u>Total</u>	90.3	94.0	91.2	90.5	9.5	91.8	8.2	90.9	9.1
19. We need to know your opinion of the adequacy with which literature in one of your areas of special competence is covered in the publication:										
A. Does coverage of literature published in <u>English</u> seem adequate ?	7-11	91.9	94.3	92.3	88.4	11.6	84.8	15.2	87.8	12.2
	12 +	91.6	92.7	92.0	84.1	15.9	85.5	14.5	84.6	15.4
	<u>Total</u>	91.7	93.2	92.1	86.2	13.8	85.3	14.7	86.0	14.0
B. Does coverage of literature published in foreign languages seem adequate ?	7-11	78.1	71.4	76.9	70.4	29.6	64.0	36.0	69.3	30.7
	12 +	82.1	74.4	79.7	71.4	28.6	78.7	21.3	73.6	26.4
	<u>Total</u>	80.2	73.5	78.5	71.0	29.0	74.4	25.6	71.8	28.2
C. Does coverage include too many references ?	7-11	87.5	88.6	87.7	11.4	88.6	3.2	96.8	9.9	90.1
	12 +	85.5	85.4	85.4	14.4	85.6	20.0	80.0	16.1	83.9
	<u>Total</u>	86.4	86.3	86.4	13.0	87.0	14.9	85.1	13.5	86.5
20. Following publication of each volume there is issued a cumulative author index and a subject index:										
A. Did you use the latest cumulative author index to assemble references by chosen authors which contained information pertinent to a problem in scientific area specified?	7-11	93.8	94.3	93.8	20.0	80.0	27.3	72.7	21.3	78.7
	12 +	91.6	93.9	92.3	17.7	82.3	22.1	77.9	19.1	80.9
	<u>Total</u>	92.6	94.0	93.0	18.8	81.2	23.6	76.4	20.0	80.0
B. Did you use the latest annual subject index to assemble references such as those referred to above ?	7-11	96.2	94.3	95.9	57.8	42.2	72.7	27.3	60.4	39.6
	12 +	91.1	95.1	92.3	55.2	44.8	55.1	44.9	55.2	44.8
	<u>Total</u>	93.5	94.9	93.9	56.5	43.5	60.4	39.6	57.5	42.5
C. If yes, did you get references to publications that contained less specific information than you wanted ?	7-11	96.6	100.0	97.3	66.3	33.7	66.7	33.3	66.4	33.6
	12 +	98.9	95.3	97.7	78.7	21.3	68.3	31.7	75.4	24.6
	<u>Total</u>	97.8	97.0	97.6	72.6	27.4	67.7	32.3	71.2	28.8

	Response Rate				Percent of Total Response					
	G. S.	Field	DC-Belts.	Total	FIELD		DC-BELTS.		TOTAL AREAS	
	Grade	Percent	Percent	Areas	Yes	No	Yes	No	Yes	No
				Percent	Percent	Percent	Percent	Percent	Percent	Percent
BIBLIOGRAPHY OF AGRICULTURE										
D. Does the annual subject index seem to represent an efficient method by which you may determine which publications you should get ?	7-11	82.5	94.3	84.6	82.6	17.4	78.8	21.2	81.8	18.2
	12 +	74.9	72.0	73.9	70.1	29.9	81.4	18.6	73.6	26.4
	<u>Total</u>	78.5	78.6	78.5	76.3	23.7	80.4	19.6	77.4	22.6
E. In the past year did you make a comprehensive search of the subject indexes of as many as 6 volumes for access to information on any one official research problem ?	7-11	95.6	94.3	95.4	43.1	56.9	54.5	45.5	45.2	54.8
	12 +	91.1	97.6	93.1	35.0	65.0	43.8	56.2	37.9	62.1
	<u>Total</u>	93.2	96.6	94.1	38.9	61.1	46.9	53.1	41.0	59.0
BIOLOGICAL ABSTRACTS										
15. Do you see issues of this publication ?	7-11	95.4	87.1	93.9	67.2	32.8	51.9	48.1	64.6	35.4
	12 +	96.0	89.1	94.0	63.8	36.2	45.3	54.7	58.8	41.2
	<u>Total</u>	95.7	88.4	94.0	65.4	34.6	47.5	52.5	61.4	38.6
16. If yes are they:										
A. A personal set	7-11				1.6		3.6		1.9	
	12 +				5.5		14.6		7.4	
	<u>Total</u>				3.6		10.5		4.8	
B. Circulated to you ?	7-11				34.6		25.0		33.3	
	12 +				36.1		25.0		33.8	
	<u>Total</u>				35.3		25.0		33.6	
C. Available in your building ?	7-11				52.2		53.6		52.4	
	12 +				53.6		41.7		51.1	
	<u>Total</u>				52.9		46.1		51.7	
D. Available in library close to where you work, but not in your building ?	7-11				41.8		39.3		41.4	
	12 +				39.3		41.7		39.8	
	<u>Total</u>				40.5		40.8		40.6	
17. Do you see issues of this publication often enough so that you are acquainted with their contents ?	7-11	98.4	92.9	97.6	76.0	24.0	88.5	11.5	77.6	22.4
	12 +	97.8	97.9	97.8	85.5	14.5	78.7	21.3	84.1	15.9
	<u>Total</u>	98.1	96.1	97.7	80.7	19.3	82.2	17.8	81.0	19.0
18. Is your use of this publication:										
A. To keep aware of results of current research ?	7-11	90.4	87.0	89.9	81.3	18.7	95.0	5.0	83.2	16.8
	12 +	89.5	100.0	91.6	92.0	8.0	88.9	11.1	91.3	8.7
	<u>Total</u>	90.0	95.0	90.8	86.9	13.1	91.1	8.9	87.7	12.3
B. To select literature references when you are reviewing what has been done on a problem in your scientific field ?	7-11	94.1	82.6	92.5	89.1	10.9	94.7	5.3	89.8	10.2
	12 +	85.0	100.0	87.9	93.1	6.9	89.2	10.8	92.2	7.8
	<u>Total</u>	89.3	93.3	90.0	91.1	8.9	91.1	8.9	91.1	8.9
19. We need to know your opinion of the adequacy with which literature in one of your areas of special competence is covered in the publication:										
A. Does coverage of literature published in English seem adequate ?	7-11	90.4	87.0	89.9	89.4	10.6	90.0	10.0	89.5	10.5
	12 +	90.8	97.3	92.1	79.1	20.9	80.6	19.4	79.4	20.6
	<u>Total</u>	90.7	93.3	91.1	84.0	16.0	83.9	16.1	84.0	16.0



	Response Rate			Percent of Total Response						
	G. S.	Field	DC-Belts.	Total	FIELD		DC-BELTS.		TOTAL AREAS	
	Grade	Percent	Percent	Areas Percent	Yes Percent	No Percent	Yes Percent	No Percent	Yes Percent	No Percent
19 (Continued)										
B. Does coverage of literature published in foreign languages seem adequate ?	7-11	73.5	73.9	73.6	67.0	33.0	70.6	29.4	67.5	32.5
	12 +	79.1	81.1	79.5	62.0	38.0	66.7	33.3	62.9	37.1
	<u>Total</u>	76.5	78.3	76.8	64.3	35.7	68.1	31.9	64.9	35.1
C. Does coverage include too many references ?	7-11	88.2	78.3	86.8	9.2	90.8	0	100.0	8.0	92.0
	12 +	85.0	89.2	85.8	6.9	93.1	3.0	97.0	6.1	93.9
	<u>Total</u>	86.5	85.0	86.2	8.0	92.0	2.0	98.0	7.0	93.0
20. Following publication of each volume there is issued a cumulative author index and a subject index:										
A. Did you use the latest cumulative author index to assemble references by chosen authors which contained information pertinent to a problem in scientific area specified ?	7-11	93.4	95.7	93.7	20.5	79.5	36.4	63.6	22.8	77.2
	12 +	92.8	97.3	93.7	18.3	81.7	19.4	80.6	18.5	81.5
	<u>Total</u>	93.1	96.7	93.7	19.3	80.7	25.9	74.1	20.5	79.5
B. Did you use the latest annual subject index to assemble references such as those referred to above ?	7-11	94.9	95.7	95.0	56.6	43.4	68.2	31.8	58.3	41.7
	12 +	91.5	100.0	93.2	55.7	44.3	51.4	48.6	54.8	45.2
	<u>Total</u>	93.1	98.3	94.0	56.1	43.9	57.6	42.4	56.4	43.6
C. If yes, did you get references to publications that contained less specific information than you wanted ?	7-11	98.6	100.0	98.9	61.1	38.9	73.3	26.7	63.2	36.8
	12 +	98.7	84.2	95.9	80.5	19.5	62.5	37.5	77.4	22.6
	<u>Total</u>	98.7	91.2	97.3	71.1	28.9	67.7	32.3	70.6	29.4
D. Does the annual subject index seem to represent an efficient method by which you may determine which publications you should get ?	7-11	80.9	91.3	82.4	75.5	24.5	81.0	19.0	76.3	23.7
	12 +	75.8	75.7	75.8	75.9	24.1	71.4	28.6	75.0	25.0
	<u>Total</u>	78.2	81.7	78.8	75.7	24.3	75.5	24.5	75.6	24.4
E. In the past year did you make a comprehensive search of the subject indexes of as many as 6 volumes for access to information on any one official research problem ?	7-11	95.6	95.7	95.6	43.8	56.2	59.1	40.9	46.1	53.9
	12 +	88.2	100.0	90.5	43.7	56.3	45.9	54.1	44.2	55.8
	<u>Total</u>	91.7	98.3	92.8	43.8	56.2	50.8	49.2	45.1	54.9

Question 5. Most research workers subscribe to one or more periodicals that contain papers in their fields of interest. Agencies of the U. S. Department of Agriculture may pay for subscriptions to other necessary periodicals. Now, assuming that the National Agricultural Library receives those journals which you or your agency do not buy, what do you think are practical means by which the Library could keep you informed on the contents (i.e., data, subject matter, substance, etc.) of those journals?

Comments received in response to question 5 are summarized according to the following broad classifications:

Comments Classified	Number of Responses
1. Circulate copies of Table of Contents (Includes 32 that also mentioned abstracts and 9 that commented on "Current Contents").	170
2. Provide Abstracts	122
3. Provide Table of Contents and abstracts	32
4. Provide aid according to readers interest	58
5. Periodicals should be routed	50
6. Information as to Services available	19
7. Special Bibliographies	17
8. Supply Reproductions	16
9. Responsibility of research worker	8
10. Other suggestions	38
11. Satisfied with present service	<u>73</u>
Total Comments	603

Significant comments with duplication eliminated are shown below. The number following the group heading is the total number of responses for each group.

1. CIRCULATE COPIES OF TABLE OF CONTENTS - 170 (Includes 32 that also mentioned abstracts and 9 that commented on "Current Contents").

724 (5) Our problem is immediacy. How about wide circulation of tables of contents of journals so a researcher can then take special steps to acquire those special papers.

737 (5) They might send a copy of the table of contents to our library so all workers would have access to them. Then each worker could make arrangements to get any particular article he was interested in.

783 (5) My agency gets regularly the journals needed in my work. Other journals are obtained when the information in Chemical Abstracts is not sufficient. If journals are not received, a reproduced table of contents would be helpful.

506 (5) A mimeographed table of contents of several journals would be helpful. Routing of journals to many workers in the field is rather cumbersome and time consuming. The journals are frequently delayed and many are without special interest.

811 (5) Send a reprint of the table of contents. The publications which we need, but do not have, can usually be gotten from sources nearby in a very short time.

512 (5) Possibly just a list of titles and authors would be useful. The worker could then get the journal if he wanted to see the article. This could precede the appearance of an abstract in an abstract publication by several weeks.

708 (5) Issuance of a monthly newsletter, with titles of articles, journals, etc. Perhaps a table of contents of each magazine.

818 (5) Possibly a monthly booklet with reproductions of tables of contents of journals which are not received in our station library. Booklets could be listed by general subject matter, Biochemistry, Practical Agriculture, etc.

178 (5) Most abstracts and bibliographies (covering all fields of interest to me) contain references to all journals of interest to me; in fact, my main objection is that they contain too much. Foreign publications take up a large part, and I have to pass a lot of food to find the meat.

I have no trouble keeping abreast of current literature through the available means; most references of real interest I run into several times. The obscure ones, I feel, I will have to wait for a real "literature search" to pick up.

No. 4-F in above (supply reproductions of tables of contents of periodicals) would be a valuable service, and might take a lot of delay out of present routing of periodicals.



845 (5) Probably the simplest effective thing to do would be to reproduce the table of contents of these journals as quickly as possible and distribute them to the field laboratories.

340 (5) Tables of contents: Rapid production and transmittal of these on a continuing basis following initial request would be most helpful. Indexes and abstracts are available, but appear too late.

745 (5) Considering the limited interest in the contents of these journals, mere listing of the tables of contents would suffice.

200 (5) Table of contents of each issue could be copied (photographically ?), mass produced and distributed to research centers. This would bring the published literature to our attention much faster than the standard abstract journals. A list of the journals to be processed this way should be circulated, and each research center could select the journals of interest.

258 (5) Our agency routes a good many of the periodicals in which we are interested. For those that they do not purchase and route, I would like to see reproductions of the tables of contents reproduced and sent to us.

051 (5) By supply reproductions of tables of contents and reading size reproductions of articles on request of employees. A list of the titles of available journals should be circulated. From this list researchers may be selective in their requests.

407 (5) I don't know. A table of contents showing titles of papers in a selected list of periodicals would be helpful, but not a complete answer because papers I might like to see frequently show up in unusual journals.

410 (5) Reproduction of tables of contents of appropriate periodicals not available in our local library. I need translations of foreign tables of contents.

565 (5) Perhaps circulate reproductions of table of contents or else send out index cards for the EJC indexing and retrieval.

177 (5) Photostats of tables of contents of journals of marginal interest would be an excellent service.

211 (5) I think a list of the table of contents of each journal could be reproduced and circulated or mailed direct to interested individuals. These individuals could then write for reprints or photocopies. Translations of titles and abstracting foreign-language journals would be very helpful.

527 (5) If it were practicable to send out tables of contents from selected domestic and foreign journals to interested people, it should prove useful to those of us who do not have ready access to them.

366 (5) Offset printed tables of contents of journals in the major disciplines of agricultural research plus interdisciplinary areas of genetics, statistics, chemistry, physics, and cytology.

For my purposes keeping up with available current journals plus the bibliographies and abstracts is usually sufficient - except for some foreign publications which I miss.

387 (5) I would like periodically to see the tables of contents of a personally selected list of journals most of which are outside my field of special interest, but are in related fields.

469 (5) Furnish reproductions of tables of contents to us. Why doesn't the library request reprints of tables of contents from each periodical and circulate or send copies to scientists in the field of interest ?

705 (5) I think reproductions of tables of contents of selected journals, the recipient could select them, could be circulated to a worker. Then he could go to the library and read something he knew was available, rather than searching.

790 (5) Provide list of titles with address of senior author. Provide reproduction of table of contents. These to be sent routinely to mailing list.

076 (5) I would like to receive reproductions of tables of contents of certain journals. (About 5 I suppose). I would like to get to keep same.

099 (5) Sending a table of contents around, or circulating the periodical to interested individuals.

111 (5) Don't think it should be expected to inform us on subject matter and substance. Might try verifaxing table of contents and sending to us and we will look into articles of interest to us.

154 (5) Distribute photocopies of table of contents pages. Then, upon request, certain journals or photocopies of papers could be sent to individual USDA scientists.

594 (5) Bib of Agr. Routing photoprints of tables of contents of selected periodicals to scientists.

Routing rare or unusual journals themselves to scientists who request this service, e.g. International Journal of Surface Activity; International Journal of Heat and Mass Transfer.

635 (5) Reproduction of table of contents of periodicals - foreign especially. Lists of newly received books and periodicals.

779 (5) Circulate photostats of tables of contents to agency library. Have board of abstractors to scan journals and key pertinent papers to the proper scientists concerned.

493 (5) Of great value would be to make available reproductions of tables of contents of periodicals of interest. I can think of no new service that would be of greater value to me.

470 (5) The Univ. of Nebr. Library circulates the table of contents of several periodicals. This procedure is helpful.

At one time periodicals were circulated at the request of the worker. A research worker will read periodicals he requests if they come across his desk while he will not take the time to go to the library to read them.

813 (5) Send a copy of contents by title and authors to our agency librarian for circulation to our personnel. Arrangements can be made to get photostat copies of any articles of immediate interest.

500 (5) Perhaps a list of paper titles could be assembled from journals of similar subject like Plant Physiology, Biochemistry, etc. These could be circulated throughout the branch.

639 (5) Reproduce the tables of contents of these journals and distribute them in groups according to the predominate subject matter of the journal. For example, a compilation of tables of contents for journals pertaining to Animal Sciences, Plant Service.

829 (5) I believe a list of titles would convey enough of an idea of the contents for the reader to pass judgment on their relation to the field of his interest.

398 (5) By sending out copies of tables of contents from which I could decide to either request reprints of specific articles or request the library to loan me the issue of the journal. If the NAL would send me a list of their journals, I could mark off the ones of which I wish to receive copies of the tables of contents.

648 (5) A weekly guide such as the journal "Current Contents", published by Institute for Scientific Information, Phila., Pa.

650 (5) "Current Contents (Chemical, Pharmaco-Medical and Life Sciences)", available in own agency unit, have been found very satisfactory for keeping me informed on contents of journals other than those subscribed to personally or available in own unit. It is conceivable that there may be journals in certain agricultural areas which are not covered by "Current Contents" or by some similar current publication in which instance a prompt listing and distribution of titles of papers in such journals could be valuable to interested personnel.

697 (5) For research scientists in the Chemical, Pharmaco-Medical, and Life Sciences, Current Contents, which prints the title pages of (they say) 550 journals, is helpful in keeping informed. For research scientists in other fields, mimeographing and circulating of title pages of pertinent journals should be helpful.

692 (5) Current Contents and similar publications keep the staff abreast of research publications in their field. In general, because of the varied type of information needed, it is necessary for the individual to read the papers for details related to the particular problem involved. Abstracts help to eliminate time spent in reading papers not applicable.

895 (5) A publication such as Current Contents can be circulated. This gives current listings of titles and would partially fill this need. Our branch already does this for our research group.

670 (5) Reproduction of tables of contents. Current Contents may do this adequately if we know which journals NAL has that we don't subscribe to.

438 (5) Reproductions of tables of contents (done already in some cases) making reading room availability - (presently done). Circulation (several copies) of "Current Contents" to groups not subscribing to this excellent service.



## 2. PROVIDE ABSTRACTS - 122

103 (5) Put out monthly summary of abstracts.

210 (5) Contents with author, title, date, number of pages, and a short two or three sentence abstract of contents of each article would be valuable. An indexing system similar to that used in the Bibliography of Agriculture could be used to break down subject matter into categories.

026 (5) I would suggest that a one page abstract be prepared for each article. This abstract could then be filed in our personal files for future use. This suggestion would accomplish two things: 1. It would help keep people up to date and 2. It would expand the use of available materials.

017 (5) It seems the important papers contained in these journals could be abstracted by categories and supplied to the concerned research agency. This would enable research scientists to keep abreast of current developments in their specific field.

796 (5) Abstracts or summaries, from more obscure foreign journals, on papers within narrow fields of interest: e.g. electron microscopy of connective tissues.

212 (5) I would suggest that table of contents for each issue be distributed, preferably with brief abstract notes so that one may be reasonably sure of the need for an article before requesting. Library could then furnish copies of requested articles to researchers. If any single office were a frequentor and steady request of articles from a particular journal, then they should subscribe.

232 (5) The greatest need in this field is for summary or abstract translations of periodicals other than English. I think that reprints of abstracts would be helpful in keeping the researcher informed and help him obtain the materials needed for his specific field.

736 (5) Probably an abstract service, publication of a periodical set of abstracts, but, unless this were highly specialized and/or very promptly circulated, it would probably be a not-too-useful duplication of Chemical Abstracts.

632 (5) Abstracts are most helpful, but this would, in part, duplicate Biological Abstracts. Photographic reproduction of the tables of contents of journals in English and translations of those in other languages would be very helpful if sent to field station personnel on a regular basis. If grouped by field genetics, physiology, nutrition and biochemistry, production and management, radiation, etc., for Plants and for Animals, each worker could choose the group or groups desired.

888 (5) Abstracts or by making Chem. Abs. or Biol. Abs. more available.

480 (5) Some system built around Biol. Abs.

613 (5) Editorial comment on new developments make Agricultural and Horticultural Engineering Abstract a good periodical to look over regularly. Abstracts provide quick coverage of article content. Though this covers some U.S. activities, it would be helpful to have an American publication of similar type.

170 (5) An abstracting journal, such as the Review of Applied Entomology, would be very helpful.

188 (5) Periodically send out abstracts. A big help to all researchers would be for all scientific journals to print abstracts of all articles in each issue similar to Proc. Soil-Science Society of America.

204 (5) Most of this will appear in time in published bibliographies (Biological Abstracts, etc.), but for quick service the only solution that appears to me would be for the Department Library to prepare and distribute abstract cards by subject matter categories (such as those used in Bibliography of Agriculture). Most agencies would need only a few of the categories.

115 (5) Subscribe to Centralized Title Service of Commonwealth Forestry Bureaux (Oxford) in our behalf. Provide sufficient sets of abstract cards for cross referenced filing by subject, country, and tree species.

131 (5) Include the references in the Bibliography of Agriculture. Prepare abstracts of the material and assemble for distribution under major and minor subject classifications.

137 (5) I find an abstract such as Forestry Abstracts very useful.

145 (5) Abstracts by subject similar to the Oxford system in England.

152 (5) Abstract the material and distribute it by subject: such as, Subject Statistics; sub field: Design; Author: XXX: Title: XXX; Journal: XXX; Abstract: XXXXXX.

486 (5) By printing an index card giving the author, title, and summary of each article which would be available upon request such as is already being done for several journals.

487 (5) Merely to resume circulation of the Bib. of Agr. would be a great help. If, then, abstracts could be made available of publications selected by title from the Bib. of Agr., we would be in reasonably good shape. This assumes a well-done, meaningful abstract.

498 (5) Patterned like present abstracts; sectional quarterly or semi-annual listing by abstract number of reports under specific crops or disciplines as sorghum and plant genetics with author, subject, etc. An additional 4 to 6 lines should be sufficient to state the problem or indicate the substance; conclusions not essential. Cross reference by listing under sorghum, for example, the abstract number of a paper that was essentially a genetics problem abstracted under genetics, but studied with sorghum as the vehicle species. Bib. of Agr. does not give sufficient indication of content, but Biol. Abs. often more than essential to indicate whether paper should be obtained and reviewed.

534 (5) By the appointment of two or three full time employees in the agency to do nothing but abstract and distribute special subject matter pertinent to the research needs of the agency. These employees must be located in Beltsville.

168 (5) It might pay to employ a reader at NAL to make a very short summary of content of all articles in about 100 journals, which would be reproduced and distributed to field agencies. I think the cost would be justified.

686 (5) Each division should have at its own laboratories two or more specialized abstract publications and one or more quarterly or annual subject matter index giving complete titles. Library should be equipped for low cost rapid modern reproduction of original research articles free to own employees; at a fee to outsiders. Present fee system is inequitable for research workers isolated and stranded through no fault of their own. At first Home Economics had its own library at Center; collection was taken over by main library of USDA and dissipated on promise of a circulating service; recently that too was discontinued. The annual investment in salary of a research man and his laboratory equipment would justify supplying to each project leader of GS-12 or above a site at his laboratory one suitable reference tool. Some industries provide a free copy of Current Contents to each investigator.

803 (5) The various abstracts which are available would represent the best method of staying abreast of current literature. This would eliminate the necessity of circulating the individual tables of contents of many journals. However, if the abstract of chemical titles idea isn't practical, then a reproduction of the table of contents would be good.

287 (5) Because of the great amount of literature now being printed in the areas of major interests, monthly annotated bibliographies would be extremely helpful. More and more help is needed to see that pertinent material is brought to the attention of a research worker.

In my former position as chemist my main source of information was Chemical Abstracts and Engineering Index. I am now in administration and do not have as much need for Library help as formerly.

793 (5) Du Pont abstracts the Chemical Journal each week for its scientists. Agriculture could try to do the same.

725 (5) First of all I would like to see a more rapid service with regard to sending copies of papers in journals that we do not have. The time lapse between request and receiving is almost long enough to forget why you sent for it. For keeping in contact with contents of a journal, the mere publishing of a title and author is not sufficient. I would like to see the author's summary as well.

696 (5) Suggest a corps of trained workers to abstract journals and scientific articles and send copies around each week.

238 (5) Especially in foreign periodicals, it would be quite helpful to have the titles and a brief summary translated and published.

252 (5) The only practical way I can think of to provide this on a regular basis is to expand the B. of A. to include abstracts. Abstracting responsibilities could be shared by USDA agencies through the agency field libraries.

259 (5) By routing bibliographies such as Bib. of Agr., Biol. Abs., Herb Abs., (this is done by our agency); it would be an excellent help if summaries of articles in particular fields could be routed to researchers in more fields. I suspect this is much too far out of reach.



207 (5) The Bibliography of Agriculture, covering, I understand, 60 percent of the world's agriculture literature, has the drawback of being only a title service. I cannot visualize any other better service for the problem, unless almost unlimited funds become available for translating and abstracting.

320 (5) Present indexes generally afford clues as to whether an article is desired for review. It is the acquiring of these desired articles by a practical means which seems difficult. In entomology, abstracting, such as done by the Review of Applied Entomology, is very useful.

322 (5) Publish abstracts of these articles and keep them up-to-date. The abstracts should include the author's full name and his official title. Also the author's complete address. This would make it easier to request reprints from the author. If a reprint cannot be obtained from the author, have it arranged so that microfilm could be made with a minimum of effort. Stay away from the high priced photostats.

327 (5) In general, Biological Abstracts, etc., make contents available through requests. They can be obtained for study (on library loan). Abstracts of pertinent subject matter, if made available on cards promptly upon publication of the article, would be useful and save much time.

338 (5) The abstract service performed by the Bee Culture library in the area of apiculture should be used as a pattern for a similar service or services in other specialties - e. g. Insect Pathology and Insect Physiology.

368 (5) Usual abstracts reviews etc., may be enough unless there is a particular point or problem warranting special handling. If so, this could be done through a central agency and copies held for reference or distribution as requested.

371 (5) A current abstract of articles appearing in scientific periodicals or a list of publications dealing with specific topics be circulated among field laboratories.

396 (5) Ideal would be to abstract articles, make these available. This would tell us whether we needed print of the whole article. If abstracts are impractical, then titles would help. We have to know what others have done and are doing if we are to work effectively.

421 (5) Automatically send abstracts at regular intervals, probably monthly, of articles in the field or fields indicated by individual workers. For example, in my case, abstracts of articles on cereal rusts in the principal journals of North America, South America, Western Europe, India and Japan would be appreciated and very useful.

423 (5) Furnishing abstracts of summaries of all articles in a respective field to researchers on request. Furnishing translations on request.

441 (5) The best service the National Agricultural Library can perform is to prepare abstracts of all articles listed in the Bib. of Agr. This would solve 95 percent of my total needs and the needs of scientists in this unit.

436 (5) A complete abstracting service for all periodicals pertinent to a given discipline is desirable, but not feasible. Other than this, I have no practical suggestions to offer.

874 (5) Use of existing abstracts (Biol., Horticultural, etc.) only practical way. Each worker own best judge what is pertinent to his work and interests. Any one else only guessing. Important that listing abstracts be available for use at each lab. Specific content should be available by request from central library.

539 (5) Mimeographed or printed titles, authors, periodical and the author's abstract or summary would be most useful. These could then be placed directly on 5 x 8 unisort cards now maintained by many individuals and location libraries, or duplicate and distribute these cards to all interested individuals and locations for specific subjects.

573 (5) Abstract papers and publish in 3 x 5 form that may be pasted to a card for a reference file.

573 (5) With adequate circulation of a good abstract with coverage of specific subject matter fields a national library could be of most service by providing an inexpensive photocopy service.

598 (5) Abstracts of published articles could be reproduced and sent to field locations one or two times per year.

605 (5) A monthly memo containing a list of published articles for each journal with a precise statement of subject matter ( a short paragraph of 3 or 4 sentences) titles alone often do not convey an acceptable discription of content.

288 (5) Supply annotated bibliographies to Forest Products Laboratories.

### 3. PROVIDE TABLE OF CONTENTS AND ABSTRACTS - 32

195 (5) A listing of titles would be most important and an abstract of each paper second most important.

158 (5) Circulate microfilmed table of contents. Using UDS, abstract articles and reproduce on 3 x 5 or IBM hand sort cards. Distribute on basis of subject matter interest, i. e. UDS classifications.

196 (5) At a minimum a photocopy of title page. Perhaps there could be expanded to include a summary or abstract of each article.

897 (5) Prepare a reproduction of the table of contents and an abstract of the articles in the journal could be circulated in the agency. Persons interested in particular articles could then borrow the journal.

293 (5) Publish a list of titles of articles in these publications. This in itself would be helpful. It would be even more helpful to follow the titles with abstracts of the contents of the articles.

867 (5) Supply reproductions of tables of contents of periodicals. When requested, photostats of articles, summaries or abstracts.

804 (5) Circulation of photocopies of tables of contents if the journals themselves cannot be circulated. Furnishing of photocopies of whole articles when an occasional paper of immediate need is noted in the table of contents.

743 (5) Reproduce the tables of contents and distribute them.

Abstract articles pertinent to the research programs of the various agencies and distribute these abstracts.

707 (5) Photostats of tables of contents and abstracts (summary portions of papers).

641 (5) Circulate titles and brief abstracts of current issues. A number of copies of each could be easily made to reduce the delay characterized in circulating the actual journals.

592 (5) A mimeographed list of authors and titles would be helpful. If time and funds were available, a brief synopsis of each article would be more useful.

134 (5) Regular circulation of tables of contents with brief indication of substance would be helpful.

567 (5) Would be useful to have tables of contents and authors summaries or briefs for these journals (particularly foreign origin) not available at locations removed from D.C. List for desired journals to be supplied by readers needing service.

330 (5) Distribution of titles or short abstracts to interested personnel on a regular schedule and making available these papers on request.

023 (5) Distribution to the workers the table of contents of such periodicals with a "capsule" paragraph of the thesis and conclusions of each article.

069 (5) Monthly list of journals and highlights with request form attached. Reader should be able to spot any articles that would be of interest.

795 (5) Since the list is large it would not be practical to go beyond title, authors, a sentence or two abstract; in other words, if a slightly expanded table of contents is circulated this is very helpful.

666 (5) I would like to receive a full size reproduction of the table of contents to keep at my desk. In addition, I would like to have an abstract of each article published dealing with my special area of investigation, preferably very soon after publication. This could be on a request basis after I review the table of contents.

617 (5) By circulating periodicals titles and tables of contents with short abstracts, 1 or 2 sentences.

611 (5) Circulation of the table of contents or abstracts of pertinent journals and magazines would be of value if done on a regular basis. Perhaps just the table of contents should be generally distributed with abstracts and full translations available on request.



450 (5) I rely on abstract journals and request items of interest. However, abstracts are normally too far behind publication of papers. Reproduction of the table of contents of the journals in question in sufficient quantity to circulate to interested individuals rapidly would provide prompt information on the journals in question.

303 (5) The minimum should be a table of contents and author, and the best solution would be an abstract of the above.

#### 4. PROVIDE AID ACCORDING TO READERS INTEREST - 58

905 (5) Send a monthly list of articles published by periodicals pertaining to agricultural research and break it down into sections such as marketing, research, production, forecast, etc. For convenience of research workers, they can analyze what they need or what could be used as an aid.

890 (5) Have the employees of a unit submit a composite list of publications in which they are interested to the library. As each publication is received, the library would reproduce a single copy of the table of contents and forward it to the unit for circulation among its members.

794 (5) That an addressograph list of Division Chiefs be compiled by work categories.

That each Chief be mailed a pertinent monthly list upon which he would indicate his division's interest. If there is not interest, destroy the list.

That the addressograph plate be withdrawn or the instrument set to print these individuals who would be mailed the abstracted article.

Upon receipt, attach office name list and circulate, indicating time of receipt and release by each individual.

731 (5) Each agency or division should compile a list of journals not received which are likely to contain articles pertaining to the work at that agency. The national library then could supply information as to subject matter, etc., in a form similar to that used by Current Contents. Further information on specific articles could then be requested by the individual researcher, through his agency.

711 (5) A listing of titles compiled under various categories relating to the subject content of the paper would be desirable. These listings could then be sent monthly or semi-monthly to government research laboratories requesting them.

681 (5) I prefer a weekly reading list by major subject areas. This involves selection by someone and hence, loss of complete coverage. However, a reading list does not have to be one's sole source of information.

612 (5) A service in which a reviewer of periodicals could be alerted to lift references under headings of drying, grain storage, etc., and forward them to us would be useful. We have, in the University Library, most of the periodicals in which important articles might appear.

559 (5) Keep the journals on file. Duplicate the table of contents and send to those individuals indicating interest in that particular journal. For journals, such as the Soil Science Society of American Proceedings for example, where a brief synopsis is available, the synopses as well as the contents might be distributed.

530 (5) A good method would be to supply this information in the form of cards which would be made available by subject matter categories such as are included in Bib. of Agr. These could then be kept permanently at each field station in a convenient card file. Requests for cards should be limited to applicable categories.

516 (5) Why couldn't a thermofax or other type of reproduction copy of the table of contents be circulated to those expressing interest in such a journal on a quarterly or yearly basis depending on the frequency of publication of the journal. Then articles of interest would be known and could be requested and it would save an abstracting service or recompilation of contents.

467 (5) If titles and abstracts of articles within my field were compiled and sent to me, I would be aware of the paper and could go to the periodical in the library for more thorough study.

464 (5) Supply reproductions of tables of contents to a limited number (10 or so) of journals (selected by myself) directly to me. Circulation of these is probably a more expensive method in the long run. Routine abstracting would be too costly and would overlap existing abstracting journals, which are improving greatly.

463 (5) Code research specialties and send related material to these coded specialty fields.

457 (5) Mail to subscribing individuals or groups a "rapid copy" of each table of contents (at cost).

451 (5) Probably the cheapest, fastest and easiest way would be to use a copying machine to copy the table of contents. Several dozen copies (more or less as required) could be sent out to each Branch interested in the journal. The Branch could then circulate it to those interested. If an article appears to be of some help, the individual could then request the journal from the library.

440 (5) Under present operational facilities, rapid circulation of grouped tables of contents of categorized journal groups (e.g. Physiological Journal) newly received (say, in a one month period) to those who specifically request such service. Circulation lists should be kept within reasonable length (not more than 10 names) and requestees should specify primary or secondary pertinence of a group.

427 (5) My suggestion for improving library services would probably entail much larger staffs and more highly trained personnel than are currently employed at the libraries, but since these are only suggestions now they will cost nothing.

The most effective method of aiding scientists would be to locate pertinent information and notify the scientists. Briefly, the system could work this way:

1. The scientist would make a list of not more than 10 topics of special (not general) interest in his field, such as sweet potato breeding, virus diseases of Prunus, grafting and budding techniques, quaternary ammonium compounds - effects on plants, etc. (This list would be checked and revised by the scientist each 6 months or year to keep it up to date.)

He would also list those periodicals he personally received and reads.

2. Qualified reviewers in the library would routinely scan the incoming new books, periodicals, magazines, etc., as well as abstracts from publications not stocked by the library.

3. The reviewers would list titles from all articles that would be of interest to the scientist, and occasionally point out pertinent subjects discussed in the article if the title does not cover fully.

4. A listing of such titles and notes could be sent to the scientist at monthly or bi-weekly intervals.

5. The scientist could then request those articles, etc., which he wants.

While the above system would be costly, good library reviewers could allow the scientists to make much more efficient use of their time. The scientist could then read pertinent literature without taking the time to hunt for it. If he has to take the time to hunt for it, he will either not do it or do it much less effectively and efficiently than the library reviewer.

425 (5) Circulation of a list of all periodicals and journals received by the National Agricultural Library to interested research workers. They could then check those of interest to them. On the basis of these check listings, mail out prints of the table of contents of the publications requested on a monthly or quarterly basis.

408 (5) A photocopy or typed copy of the title and contents pages of specifically requested publications could be sent on a subscription basis to individuals or agencies requesting them. This should be sent out within a day or two of your receipt of the periodical in order to be effective. This would do much to close the 6 to 12 month gap between periodical publication and the scientist's awareness of contents through listing in the Bib. of Agr.

373. (5) The National Agricultural Library should prepare a list of periodicals and a list of types of books it receives. The printed list should be sent to every USDA scientist and he should be requested to check the list showing his interest and return to NAL. He should then be placed on a mailing list for periodicals and books as issued, on a short term loan basis. This program would undoubtedly require additional funds, especially for purchase of additional copies of well used periodicals and books, but it would be well worth the effort. The cost could be reduced some by sending the periodicals and books to laboratories whenever feasible thus serving a number of scientists with a single copy.

319 (5) An annotated bibliography of all papers in the field of interest should be routed to individuals and maintained currently.

313 (5) The present B. of A. published by the National Agricultural Library carries titles arranged by subject matter heading. These titles and associated information could be put on 3 x 5 cards and made available through request or subscription to individuals and agencies who would ask for those cards pertaining to subject heading of concern to their work.

279 (5) I'm not sure this means would be practical, but a periodical title abstracting service might help. This would have to include all periodicals received by the National Agricultural Library, and the publications would have to be classified according to the field of interest they cover. These listings could be used for requesting reprints of individual articles.

278 (5) Accession lists or abstracting services, broken down by categories so that I receive only what I want.



265 (5) Abstracting service. These abstracts could be classified according to professional categories and could be routed to the research worker as he so desired.

207 (5) Possibly an economical method, such as XEROX, could be used for reproducing the table of contents and annual indices of the various journals. Those could be routed to the researchers according to a list of publications which each man selects from each year.

183 (5) Forest research projects are now limited in scope, and hence, subject matter can be divided into find parts by coding. Each project worker could specify which codings were of interest to him. Screening lists of publication titles, with author and publication; identification, plus access to reprints or reproductions would suffice. An intermediate step, desirable for some fields, would make available short abstracts.

150 (5) In some cases you buy several copies and assign them to certain Expt. Stations or Research Centers.  
Abstract and send out cards on specific subject to certain researchers interested in those subjects.

144 (5) On a large scale basis subject matter bibliographies, could be circulated on a request list. Abstracts accomplish this, however, they are not current. We have been using BASIC, but do not have a file of Biological Abstracts to check out references. Again there is often a time lapse before they are printed in abstracting journals.

143 (5) Periodically circulate listings or abstracts of the most important articles published in these journals to the various agencies concerned with the particular subject matter. Have an editor annually summarize the new information contained in articles published in these journals by subject matter (with appropriate references) and circulate these annual summaries to the appropriate agencies.

123 (5) Keep an IBM file of names of research workers and their fields of interest.  
Send to research workers a copy of the tables of contents of the periodicals he is interested in.  
On request send an abstract of the particular paper.

107 (5) Prepare reproductions of tables of contents of periodicals and send to selected list of interested persons. If there is sufficient interest perhaps an abstract of articles in some of the more popular periodicals could be prepared and distributed too.

080 (5) By immediate circulation upon request to interested parties - material in my work that is kept on the reference room shelves sent if the next issue is received, usually in a month, is of little or no value to me when I receive it on a circulation list.

067 (5) There are various information retrieval system possibilities. First the library has to have lists of special interests of particular persons. It screens incoming technical material and forwards appropriate notices.  
This could be adapted to B. of A. When the listing on an item is not a master card, copies could be run from it and referred to all interested in that subject. It could indicate number of pages, number of tables, number of figures, and title.  
The card would also be used by the researcher for indicating whether he wants to "see", wants a copy, or does not need.

022 (5) If possible, a system of requests by individuals for abstract of articles dealing with specific subject matter areas would be helpful. Persons in field locations would benefit greatly from this service if it could be put on some type of mail order basis.

019 (5) Circulate a table of contents including book reviews and other information (perhaps a brief summary or abstract of the main articles) to everyone in the field of interest and circulate the copies of the periodicals to those signifying interest. Place a restriction of 3 days, for instance, on the length of time for keeping before forwarding to the next individual on the list.

894 (5) Small key sort cards suitable for filing should be supplied with a short summary, etc., on cards to research workers. Research workers would get only those cards important to their field of research.

##### 5. PERIODICALS SHOULD BE ROUTED - 30

036 (5) A rundown of recent publications circulated periodically might be useful, but I am wondering whether it could be particularized and boiled down sufficiently. Just adding another voluminous list to check out every month or so probably would not be very valuable.

039 (5) I see no reason why each professional couldn't have a limited number (say 5) journals or periodicals routed to him.

042 (5) I was very disappointed when the number of circulating publications was sharply reduced - and the number of names on the list also was reduced. I have not found current copies on the Reading Room shelves several times when I wanted to review the periodicals. I definitely feel the Library has carried "economy" too far. I don't have time to wander back and forth just to check

up on what may be on the periodical shelves.

100 (5) Circulate the journal if contents are frequently of real interest. Sometimes titles shown in table of contents are misleading, and duplicating and circulating just the table of contents could run into lots of time and expenses for value received.

184 (5) Needed publications are circulated on regular schedules. Sometimes this is very slow. Additional copies might be purchased to make smaller circulation lists. Consequently less delay.

241 (5) First, I would like to know which periodicals I may see each year. Second, I would rather see the journal than a letter telling me what's in it. There are several periodicals now I wish were circulated over my desk. We seem to lack many of the foreign periodicals. Why not ask us which ones should be bought by the library ?

244 (5) I can think of no feasible means other than through circulation of existing abstracts such as Forestry Abstracts, Biol. Abs.

247 (5) I want to have certain foreign periodicals routed to me, a service that the Washington Library did render. There is no substitute for glancing through articles, except for abstracts. Styles and trends are not available from abstracts. Get or give us the money and route the periodicals.

274 (5) Circulation of abstracts is best except that articles are sometimes a small part of journal and periodical information. To "keep up" in my field, Society Announcements, Commercial Ads, and photographs of information are more important. Subscribe to more periodicals and circulate them to interested persons.

352 (5) We now subscribe to Current Contents and Chemical Titles, but this does not take the place of circulation of journals.

380 (5) Routing periodicals and photocopying papers in which we are interested which will be placed in our station library.

390 (5) I rely on abstracting services to keep informed in my special fields of interest. I then request reprints from the authors. I don't think there is any substitute for browsing through journals however. The more journals I can see, the more I like it. One way to accomplish this is through circulation. I wonder if copies (as inexpensive as possible) could be circulated thus leaving the originals in the libraries.

391 (5) Best way would be to circulate the journals to interested people. If an individual or an agency does not subscribe to a necessary journal, it probably only contains pertinent information and the best way to find this out is to actually read the journal article - or abstract which is usually insufficient.

347 (5) Normally each agency subscribes to the journals that most of the personnel are interested in or working with, but if they don't, the library should poll the personnel to see what journals they would like to have at their disposal.

550 (5) Return to the practice of the Western USDA library of circulating these journals upon request of the researcher. Why this valuable service was discontinued I do not know, for it was false economy.

554 (5) Scheduled routing of journals appears to be the best workable plan. The library follows this procedure and at same time points out the necessity of not letting the journals remain on your desk too long. The slowness would be the only objection to this plan. However, when people cooperate, it would work smoothly.

603 (5) Routing for review and perusal -- to locate articles of possible interest and benefit with the entire article available at the same time (is needed.) Routing provides effortless information to the reader. It avoids the need to go through work & channels.

967 (5) Circulate the journals as received; continue the Bib. of Agr., which I consider to be one of the most valuable sources of reference.

645 (5) Continue Bib. of Agr. Reinstate routing of periodicals. Enforce 3 days per individual by requiring dates after names and dropping those that have retained periodical for more than 3 days.

661 (5) Circulate current numbers for a limited time.

673 (5) Restore scheduled circulation at least to the various laboratories in the field or city. Renew the old system of routing periodicals to the worker's desk, if possible.

674 (5) Circulate the journals. Circulate reproductions of table of contents. Circulate reproductions of annual or volume, author and subject index that many journals compile.



685 (5) By circulating (service may be improved). However, this apparently isn't practical.

694 (5) I still think the best way is to circulate journals, with penalty for not returning on time; next best is to keep journals on reserve, publish a schedule of where available and provide transportation to library. For instance, Current Contents, which I see occasionally, is not too helpful, or any more helpful, than my going to the library and running down table of contents and then leafing through journal.

695 (5) Any means to be really helpful would have to include desk to desk circulation with the problems that involves. Titles and authors would be useful. Even a very brief annotation to the reference would make the listing much more valuable.

703 (5) Buy enough copies to circulate to all who need the periodicals. Circulate copies of tables of contents.

751 (5) Perhaps the entire journal could be routed to a reasonable number of central points (in our case our library), where it would be on special display for a short time. Articles of interest could be noted on an attached sheet, the articles photostated all at one time (in our case) and the journal sent on its way.

833 (5) Circulation by routing all journals wanted. Time allowed for each person should be limited.

885 (5) Agency does not furnish periodicals. Regular routing of periodicals by mail would be practicable.

898 (5) I view the circulation of periodicals to those researchers who request them as a valuable service, despite the time lag. However, this service up to now has been very spotty with long periods of dormancy.

## 6. INFORMATION AS TO SERVICES AVAILABLE - 19

508 (5) First, I understand that the National Agricultural Library is available for field use, but I am not familiar with procedures of procurement. Perhaps information is available, but I have missed it. Titles are usually sufficient information to indicate subject matter. Abstracts are quite useful for literature reviews, but whole articles are preferred in many instances.

494 (5) Make the Bib. of Agr. available to field offices which are not situated near a suitable library. Field offices can then request loan of materials of interest.

472 (5) Circulate monthly check lists containing titles of articles and where they may be found.

521 (5) I cannot envision any practical method of disseminating this information to all agricultural personnel in different fields of endeavor without sending a great deal of information to each, which is not pertinent to the individual. However, I believe many field personnel are not aware that the USDA Library request cards are available and that reproductions of publications are available for their use. Possibly more publicity is needed concerning the library request cards.

883 (5) Do not feel that any practical system could be devised for units afield. Better that the field units be appraised of service available then let actions come from them in form of specific requests.

880 (5) Supply labs with a list of journals received and a general comment on the type of journal they are if the articles are not covered by the Bib. of Agr.

064 (5) It would seem to me that the NAL could send a listing of the periodical subscriptions that are active in the library files to each branch or division which in turn would route the listing to its staff. This could be done every 6 months. The point of the researchers seeing this listing is to refresh their minds as to what periodicals are available to them. I think that most researchers would have an idea about the subject matter of the periodicals just from the titles.

861 (5) Contents are probably already adequately covered in various available abstract journals. Might be desirable, however, to have lists available, to all employees, of journals available for loan from the Washington library. Also, of loan procedures.

850 (5) Four times a year circulate a list of periodicals acquired within the last two years. Make available to all research staff so they will be aware of their availability.

698 (5) Quarterly send listing of publications on hand in library for workers use or index of subject matter of library's abstraction of various current articles.

It would be helpful to be informed of the services rendered by the library when one is first employed by the USDA. This could be worked into a movie and used as part of the orientation program.

683 (5) With the facilities which we have, listed above, the best services which the library could provide would be a list of periodicals which it has and most important, make photoprints of articles available upon request. A service which, as I recall, was once provided.

560 (5) By furnishing to all technical people a periodically revised list of available journals. Individual agencies could then have access to needed information, in the chemical field at least, by subscription "Chemical Titles", an ACS publication using keyword indexing system.

456 We receive Plant Breeding Abstracts and also have access to Biological Abstracts, etc., at the State College Library. We suggest a list of available journals be prepared and sent to workers in related subjects periodically.

358 (5) All that would be required is a list of the periodicals received by the Library.

328 (5) Periodically supply each field laboratory of preferably each scientist in ARS, with a list of the journals received by NAL. As an addendum to the above, once per year supply brief description of each journal indicating the subject field covered by the journal.

306 (5) Furnishing lists of those received; furnishing abstracts on request.

079 (5) Circulate list with indication of subject matter covered.

009 (5) Perhaps a list similar to that showing GPO publications each month. To a limited extent, publications such as Sociological Abstracts, Psychoto Abstracts, etc., now perform this function. Most important is that the NSL collection of social science periodicals is (necessarily) limited.

117 (5) Need a list of the journals and periodicals maintained by National Agricultural Library.

#### 7. SPECIAL BIBLIOGRAPHIES - 17

740 (5) The bibliography would have to be of very narrow subject range (i.e., field of fatty acid chemistry), published on a weekly basis to be of use to me.

659 (5) By furnishing us a bibliography of all articles published on animal husbandry with the titles of such articles in English.

657 (5) Distribution of specific listings by subject matter pertinent to research workers investigations; abstract service and photoprints services would be helpful.

606 (5) Abstracts by subject matter field rather than an agricultural abstract of all field in one publication. This could be issued once a year.

497 (5) Compiling special bibliographies. Supplying reproductions of tables of contents of periodicals. Abstracting and by scheduled routing.

397 (22) To save publication costs, Plant Science part might be distributed separately from Animal Science and/or Entomology.

383 (5) Augmenting the service under D above (compiling special bibliographies) would probably help the most. At present, I believe there are two workers in this cataloging section of our Branch, and a third has been requested. Usually, our office apparently experiences great delays in filling these vacancies.

377 (5) In view of the work and cost, probably only lists of titles could be made available to the Branch or Section working in the various fields. This is now available in Bib. of Agr. which we do not receive, but which is available in the University library.

367 (5) Bib. of Agr. has been very good. Would like more information on obtaining reprints, especially foreign, if available through USDA library. A bibliography of specialized fields, such as toxicology, would be of great help. Even more specifically, bibliographies on a certain phase (e.g., metabolism of insecticides) would be of interest.

346 (5) Large portion of my time is spent in a search for literature reference pertaining to my field. If a high level indexing service were available it would help (indexing level similar to Chem. Abs. indexes or similar, but in other fields).

345 (5) Distribute current bibliographies in certain fields.



253 (5) Through quarterly distribution of brief bibliographies (by broad subject matter) to those requesting such information.

174 (5) By preparing carefully annotated bibliographies according to narrow fields of specialization. Subject matter fields now employed are often very broad (i.e., CROPS, covering cereals, cotton, flax, tobacco, rice, improved pastures, native ranges, etc.) requiring excessive time to seek out subject of interest.

162 (5) Digests, by specific fields, listing summary and reference.

021 (5) A quarterly list of articles published in my field would be helpful.

900 (5) If I received a bibliography of all articles dealing with physical properties of cotton fibers, it would be wonderful.

759 (5) Distribute weekly bibliographies to the different agencies, however, because of the enormity of a project of this type, this does not seem practical.

#### 8. SUPPLY REPRODUCTIONS - 16

471 (5) I subscribe to Chem. Abs. to keep informed on contents of journals to which I do not subscribe or have ready access to. The National Agricultural Library would have a hard time duplicating the service given by Chemical Abs. However, it would be convenient if I could send a list of citations to abstracts in C.A. and get reprints of the original articles.

374 (5) The National Agricultural Library could make available to individuals photocopies or other such reproduction of all papers abstracted in the Bibliography of Agriculture. The requests for reproductions would be forwarded through the individual's branch office and the cost of producing them would be charged to the branch funds.

282 (5) By obtaining copies of requested articles. With current equipment for reproducing articles this would be expected to be cheaper and less troublesome than obtaining the periodical on loan.

240 (5) Make available to all agricultural agencies and field units a complete list of journals and periodicals received. Provide microcard or microfilm reproductions of requested papers at a nominal cost. Provide a reproduction of table of contents of periodicals received on a monthly basis.

102 (5) Mimeograph contents and send copy to those interested.

048 (5) Circulate copies as received, and provide photocopies of the specific articles readers desired upon request. This would speed up circulation of original and give reader a permanent record for his files.

499 (5) I would prefer for the articles in journals be reproduced for me (those which I'm really interested in) and leave the journal in the library where the articles can be examined to determine if I need a reproduction. A reproduction of the contents may be distributed to those interested in a particular journal and do not have ready access to it.

515 (5) I don't know. The distance (to Pullman, Washington) is one difficulty. I rely on Chemical Abstracts and write for reprints. However, no way I know to get reprints of Russian papers, and Japanese authors seldom respond to reprint request.

583 (5) Make available to us reprints of translated works.

587 (5) Provide a copy of the entire article. This would cost less than attempting to abstract. Abstracts are only one reader's viewpoint.

628 (5) Pertinent articles could be duplicated and sent to those working in the related field.

784 (5) Reprints of these articles could be circulated through the agency library.

#### 9. RESPONSIBILITY OF RESEARCH WORKER - 8

437 (5) I believe that it is my responsibility to keep informed. I scan Chemical Abstracts and Current Contents. Then I go to the library and look up articles which interest me. The library performs its function when it has the periodicals I need. By the way, the Plant Industry Library has given me wonderful service.

286 (5) I would consider it unnecessary since it is the responsibility of the researcher to keep informed by reviewing abstracts.

The cost of supplying personalized abstract service to hundreds of individuals would be unjustifiable.

280 (5) I am concerned with the rather large field of combustion. There are also several other groups in scattered locations within the department doing selected work. In my opinion, it would be impractical to have a central library service trying to serve the periodical needs of all of us because of the time factor.

254 (5) I believe that the Library should advise the various agencies of what journals are available, and not work on content. Research workers do not benefit much from such a service. Rather, the various abstract journals suggest a few papers, those papers give more references, and so on.

251 (5) There does not appear to be any practical way to keep the great variety of interest and needs covered through USDA library efforts.

059 (5) Such a project to cover the interest and area of work of each researcher in the USDA is not conceivable. A good researcher will undertake a literature search and keep current on the subject or project he is analyzing.

053 (5) Not very practical for NAL to serve a small field office. The researchers here take initiative to obtain information pertinent to proposed and on going research.

013 (5) It would not be practical for the library to attempt to keep our staff informed of the content because of the highly specialized nature of our research and the breadth of the subject matter of concern to us.

#### 10. OTHER SUGGESTIONS - 38

826 (5) By making these journals available in a special reference or reading room. By abstracting and making copies of these abstracts available to scientists interested in that journal. This would involve a lot of work. A scientist is generally content to have the journal available.

442 (5) I feel that maintaining an up-to-date and adequate periodical shelf in the library is sufficient.

037 (5) Current issues of Appraisal Journal and other periodicals should be placed in the Reader's Reference Room for consultation as required.

016 (5) I find that the most effective way for the periodicals not purchased is to have them available on your shelves according to subject matter so that we can browse through several issues of several journals in an hour or so.

870 (5) Circulate a library accession sheet such as our library does for acquisitions in this building.

429 (5) Deeper indexing of content.

819 (5) Although our Library does subscribe to most essential journals, it would be a good idea to specify those journals which source workers might need, in which case the National Agricultural Library could supply at least the subject matter.

654 (5) As indicated above, our chief literature sources are in the past; current articles in our field are so few than when we see them in Biol. Abs. we can assemble them at our convenience. One of our problems is procuring copies of old theses published and filed in Europe.

632 (22) Organization of contents needs to be modernized. Classification by type of work rather than by species or class of animal would be an improvement. For example, to locate papers on animal genetics we must go through each species heading. There is no definite place for genetic results on insects. Why not organize by animal and plant genetics, physiol., etc., with species as subclasses ?

312 (5) A "subject phrase-index". Titles are helpful, however being by necessity brief there are many instances where a useful paper is not seen because the title does not indicate that the subject of interest is treated in the article.

395 (5) Department or division quarterly abstract reports of progress on current research and publications.

054 (5) Due to the relative location of our office to the National Agricultural Library, it appears more practical to receive a direct subscription to periodicals of interest or a trade-directed interest due to timeliness. Professional periodicals might be scheduled for distribution, but might be obtained on subscription due to relative location of office and national library.



204 (22) It would be helpful if the abbreviation used conformed to those required by the Gov't. Style Manual. I would prefer to have titles of foreign articles given consistently in the original language (except for those using other than the Roman or Cyrillic alphabets.)

384 (5) Hire catalogers who can prepare at least author cards. Some agencies have their own group to handle this, but in most cases the staff is overburdened with work. More people should be available for this work, especially since there is such a terrific increase in publications since the last World War. We are in many cases continuing with the same number of people that were used 20 years ago. This failure to progress with the times is a great deterrent to progress and efficiency. I suggest that a system similar to that used by the Insect Identification & Parasite Introduction Branch of ERD be used as a model, but be revamped in some areas and especially for other agencies' needs.

133 (5) In our particular case, as subscribers to the Oxford Centralized Title Service, it might be helpful to contribute or make available to this organization complete coverage of forestry literature published in USA, if this is not already done.  
Or, independently or in cooperation with the Oxford Centralized Title Service initiate a similar card catalog service for domestic use.

758 (5) Absence of the journal to the individual cannot be substituted. The abstract does not provide sufficient information for its cost and effort. The only practical recourse is to provide subscriptions for these needed journals.

411 (5) A number of periodicals are need in Experiment Station library and if the agency could pay for part of these, it would be a great help. At the present time the agency is not buying any periodicals needed in connection with the work here.

788 (5) By placing the titles and references in the Bib. of Agr. as soon as possible.

213 (22) I find Biological Abstracts easier to use. The Bibliography of Agriculture is massive and discouraging when a quick review is desired.

433 (5) It is necessary to have access to certain periodicals immediately after publication rather than waiting one to two months for them to cross my desk.

181 (5) Only through aid to maintain a complete library at Stoneville, Miss. where over 80 scientists work in various fields of agriculture - - without a library within a hundred miles ! ! !

052 (5) Expedite circulation. Add subject matter sections in library reading or study rooms so subjects could be quickly located by interested parties. Allow better access to stacks. Time is a vital factor in location and study of material pertinent to this work. Time of personnel involved as well as the date of publication. Some journals in circulation are old when received.

046 (5) Better reading room facilities - present space for current periodicals too cramped. Agricultural economists and economics not as well served as some other fields in professional journal coverage.

065 (5) The following type of format could be made available to research workers.

Name of publication:

How often published:

Type of articles - news, business, financial, etc.

776 (5) Screening panel such as SU Library has could be established.

767 (5) A committee screening these periodicals and bringing to the attention of researchers is the easiest and to date, the best way.

875 (5) Seems impractical for the library to try to keep researchers informed of the content of all journals that are of interest to us. We must use the Bib. of Agr. and abstract journals to keep up with research. Faster response from the NAL to our requests for reproductions of specific reports is desirable.

615 (5) The ideal way would be to have all information stored in punched tape or other data logging or memory systems and when asked by a researcher, a list of articles and books could be furnished or the digested facts could be sent also. This would save a lot of the researchers time in rereading the same story to gain one or two new facts.

167 (5) Bibliography of Agriculture does a fair job, but indexes are too far behind. Bibliography of Agriculture should go over to a machine type of indexing of the new BASIC titles - subject index of Biol. Abs. Also, B. of A. should be put out in 2 or 3 sections - with quarterly or semi-annual cumulative index.

148 (5) If there were an available punch card sorting routine based on subject, year of publication, language, author, etc., I believe search of literature would be much easier.

597 (5) Need more emphasis of earth sciences especially geology and geochemistry.

307 (5) Possibly "rural sociology" might be added to the list.

304 (5) The most important abstract journal for soil chemists is Chemical Abstracts. This journal is not circulated here, although several others, beside myself, requested it. It would be very desirable for this periodical itself to be circulated, since there are rather stringent restrictions on lab personnel as regards going to the library to use any journals there.

029 (5) Need Journal of Range Management, for example, as well as others now unavailable, but have been informed that USDA cannot purchase these for my use in official research activities. A regional USDA library would help in these instances, now unavailable.

022 (5) Need information from Engineering Index - similar to Bibliography of Agriculture. How to get this information without seeing the volume is a good question. Need better arrangements with the two university libraries if possible.

296 (5) Subject indexes are most useful to me. If such journals as the Review of Applied Mycology abstracted all literature, I would have little use for card indices in the fields of plant pathology, fungus physiology, and mycorrhizae. It is almost impossible to completely index by subject every scientific article, and if done, card and journal indices would be longer and less usable. From my point of view the reviews of Applied Mycology and Economic Entomology are the most useful when one wished to investigate a new subject. It is also regrettable that complete university theses are not more readily available.

401 (5) Branch libraries such as we had at San Francisco and later at the Univ. of Calif., Davis would be helpful. I consider the closing of the branch libraries a serious setback.

852 (5) Our branch library, together with lending facilities at Univ. of Calif., make our selection very good. Additional current information on contents of journals we wish to see, but do not have, can probably be furthered considerably by extended use of key word indexes.

722 (5) The acquisition of current information in active areas and of background information in any new area of research and development is a task of considerable proportions. Some people argue it is easier to run a reaction or try an approach to a problem to find if it will work than to attempt to survey the literature. If they are successful in the experiments on the subject, they must survey the literature; if they fail, a survey may not be made.

The use of key words in our research, publications, patents, etc., can become a factor of primary importance if these key words are properly indexed and used. The uniterm system used by the Information for Industry, 1000 Connecticut Avenue, Washington, D.C., is excellent for patents. By selection of three key words, a bibliography of U.S. patents, based on these words, can be readily prepared. Use of three key words usually reduces the number of references to a workable size. This organization now has a magnetic tape edition of principal key words.

If this system or something like it were on the literature of science, it could be most helpful to all scientists. This help would be most welcome to scientists who do not have primary sources and abstract journals available, but it would save much time for those scientists who have abstracts and primary sources available, also. Are the research and development scientists asking for too much? Chemical Abstracts has key word indices. Perhaps the job of indexing the print out is too big or too expensive for our country or know-how? I doubt it.

Other systems I am sure could be made to work, but the use of key words and their combinations to pinpoint the selection of reference appears highly desirable. One would then be faced primarily with selecting the proper key word to obtain the references needed.

The literature scientist needs more credit than has been received, but we also need to have better access to the literature for all scientists. Chemists have an excellent abstract journal, but it is not meeting the need for rapid retrieval. More assistance is needed on current literature to supply project leaders and research groups with abstracts of the important papers in the designated areas of work.

Each publication, patent, etc., should have an abstract prepared by the author or inventor using the key words. We could proceed readily from this solid foundation. For chemistry, Chemical Abstracts would be the logical organization to undertake such a job or permit its indices to be used for the preparation of a uniterm system.

I recognize that a careful study of this problem is need, and that I may be naive in my hopes that the research scientist will ever have the backing in literature he needs.



618 (5) Fast publication in the Bib. of Agr. and fast periodical loan. As soon as a good key word system is developed for agriculture, it should be included in the Bib. of Agr. listings.

020 (5) A quick reference to current journal materials could be most useful. Not as much as an abstract, but key words that would indicate the subjects covered. Nothing so broad as a Bibliography of Agriculture, but reference lists in particular fields, e.g., agricultural economics, or animal husbandry. Once every two months should be a good interval.

#### 11. SATISFIED WITH PRESENT SERVICE - 73

847 (5) Abstract services now available appear to be adequate.

856 (5) Present abstracting and title survey suffice.

858 (5) Chemical Abstracts and Chemical Titles now take card of this. You could be of no help.

873 (5) Pretty well covered in the new BASIC. However, we need access to Biol. Abs., which with their new publication policy, will be too expensive for individuals to buy. Same problem with Chem. Abs.

884 (5) The present system appears adequate for my own needs, i.e., perusal of Bib. of Agr. or Biol. Abs. If I spot a likely title, I can simply request a photostatic copy of the article in question, if it is unavailable at KSU.

846 (5) Our library subscribes to a large number of periodicals, among them Chemical Abstracts. Regular supply of subject matter from other journals seems not needed.

840 (5) Reliance is placed upon specialized published abstracts (on textiles) to keep abreast of literature. Do not believe special abstracting of journals received by National Agricultural Library would be necessary.

800 (5) Very satisfactory. Journals are circulated after being available on a counter for two weeks, sometimes photostats of indexes are circulated.

791 (5) In my opinion, nothing can take the place of a few hours spent personally in the library occasionally. I would prefer competent and sufficient laboratory help in order to allow me time from the lab bench for study in the library to having pre-digested information fed me from the library.

777 (5) We usually wait until the reference has been abstracted and then get a reproduction of it from a library which buys the journal in question. For instance, Comptes Rend, J. of Chem, Phys. are available at Tulane Univ., from whom we borrow the volume in question. Some borrowing also from Lib. of Congress. Not the best system, but we manage.

771 (5) We are informed about current articles of interest to our research through a weekly circular which is made available to everyone.

770 (5) Abstract journals and title lists (including Bib. of Agr.) appear to be adequate for this.

764 (5) A close communication system between the two libraries is necessary in order for the agency to indicate its needs.

756 (5) Subscribe to Current Chemical papers. This is an excellent way to keep up with current publications.

747 (5) This library circulates the periodicals to those who are interested.

728 (5) This situation has not been a problem to me.

726 (5) The periodicals necessary for my work are either available at Northern or can be obtained from USDA Library.

699 (5) When the occasion arises, I would prefer to examine the contents of publications in a chosen area and decide personally whether I want to read them. It seems to me that the time and manpower involved in providing an adequate subject matter resumé would be prohibitive and would never satisfy individual needs.

678 (5) No effort necessary since various title journals and lists are available of latest literature. These are purchased by Agency or by individual so that there is relatively little lag in availability of new work.

655 (5) I subscribe to Chem. Abs., Journal of Heredity, Journal of Animal Science, Farm Journal, National Hog-Farmer, which are useful. The Department furnishes the Bib. of Agriculture, which is useful to keep up with current research - reprints then may be obtained from the library in Washington, D.C., usually thermofax copies.

646 (5) Our agency furnishes an extremely broad spectrum of periodicals which are rotated around the Department as the periodicals come off the press. This seems to me to be a very effective method for keeping up with the literature in your particular field.

626 (5) I do not think a satisfactory method could be devised that would be as useful or economical as making our own search in available libraries or purchasing the journals ourselves.

619 (5) There is no one else, that I know of, doing similar research. Therefore, such material as appears in print is in the nature of short articles. I would like to have copies of these articles for my files.

601 (5) No special effort is needed on my behalf, so long as I work near a university library.

602 (5) Periodic distribution of synopses of articles such as appear in Soil Science Society of America Proceedings.

582 (5) I doubt if there is a practical way the library could keep us informed about the contents of publications other than that given by Biol. Abs., Bib. of Agr., Soils and Fertilizers, etc.

579 (5) I don't see any way that you can routinely assist us. When we need special issues of a journal or a book, you would, of course, assist us by supplying it upon request.

We used to have a regular assignment of journals which were sent to this laboratory from USDA library. They moved very slowly through our laboratory, sometimes were lost, and often were very much later in reaching us than we would wish in order to keep abreast with our own area of research.

556 (5) Each man's interests are different, therefore, it would be necessary for the individual to see the journal. At Beltsville, the new journals are placed on the shelf for 2 weeks in the library. During this period, they cannot be taken out. This allows a man to review the literature about once a week and works out satisfactorily for me.

520 (5) I have no other suggestions than use of various publications of abstracts to keep up with current material in one's field.

518 (5) Chemical Abstracts and Biological Abstracts in my fields of interest are doing an excellent job in the field. Rather than attempt to compete with existing abstract journals, the National Agricultural Library might consider subsidizing these publications to reduce costs to individuals or groups that are interested.

513 (5) I use abstracting journals such as the Review of Applied Mycology (RAM). Abstracts of papers, particularly German, Russian, French and Japanese, are of use to me. RAM is a subject matter journal. It is well indexed to check specific items of interest.

509 (5) No effort by the library is suggested. The laboratory plans to buy a few journals that members consider worthwhile. We now receive the Bib. of Agr. and a new service called BASIC by Biol. Abs.

504 (5) By use of a publication such as the Bib. of Agr., (we keep informed about current material in our field.)

491 (5) Our local facilities seem adequate to keep us informed about journal papers.

476 (5) Bibliography of Agriculture is good; it could be better by improving coverage, by cross-indexing under the different headings, and by use of brief abstracts.

466 (5) Presently have a service in the Crops Protection Research Branch that furnishes a bibliography on weed control articles. This has been satisfactory.

455 (5) Obtaining the Bib. of Agr. has been very helpful, plus the excellent cooperation from the N A L in sending books and photocopies of requested articles in the journals. I believe receiving photocopies of requested reprints from periodicals is the most practical and quickest method of obtaining new information. Circulating journals would be too, slow.

454 (5) Most of these services are available at the Univ. of Minn. Library.



453 (5) Abstracting agencies now handle this adequately.

430 (5) Lending the periodicals on request is usually sufficient, especially if the agency provides a copying machine and paper in sufficient quantity for preparing copies of important passages. To rely wholly on one's notes of articles seen some years earlier, or on abstracts or reviews published on such articles, or on text-books or treatises discussing such articles, is to lean on a reed much weaker than is generally supposed. Some earlier papers, though cited a hundred times each year, have actually never been seen, much less read, by the authors of monographs, books and symposia citing them.

428 (5) Generally, this would not be necessary as most research workers keep up with those publications most useful in their program. Also, it is not possible for many research men to review the publications available. Too many other routine and administrative duties.

419 (5) I feel that I am adequately served by the local University Library. I find the Bib. of Agr. useful.

416 (5) I personally have little need for such facilities. However, if I did, I think a practical method would be for the worker to find articles he needs or may be interested in through Bib. of Agr., Biol. Abs., or now BASIC and then request a copy from National Agricultural Library. The Xerox process makes good cheap copies.

412 (5) Bib. of Agr. as present. Photoprints, microfilm, circulating.

403 (5) I think the Bib. of Agr. is sufficient. I can tell from the author and title whether I should obtain the paper or an abstract.

392 (5) Research workers are not so often interested in the contents of specific journals, as they are manuscripts in specific fields. Abstracting services such as Biol. Abs., Weed Abstracts, Herbage Abs., furnish all the general literature review needed by me.

386 (5) The Bibliography of Agriculture seems to be an adequate method of informing workers of contents of material received.

379 (5) I feel that these journals should be indexed as they are in the Bib. of Agr. and either journal or a photoprint of the desired article should be sent to the interested researcher. In other words, I think the present system is satisfactory.

378 (5) The Bee Culture Library does a pretty good job of keeping us informed by supplying us with bibliography cards, abstracts and translations of the important papers and will translate others on request. The USU library does not have the staff to do this.

375 (5) I cannot visualize an abstracting system or circulating route schedule from Washington that would be economically reasonable, but if workers made only specific requests after reviewing the Bib. of Agr., it might be feasible.

294 (5) Seeing the Bib. of Agr., then the opportunity to borrow the journal is a good system in my opinion.

292 (5) The Bibliography of Agriculture serves as a source of information on the literature generally. Also, Forestry Abstracts, Oxford, England. Reference in specialized fields of interest are too few to justify an abstracting service by USDA.

291 (5) Through a summary or abstract. However, in my particular field, The technical Association of the Pulp and Paper Industry publishes a bibliography monthly of recent articles and this is available to us. It includes a short abstract of each article.

285 (5) The individual scientist must keep himself informed on published matter through the use of such means as Chemical Abstracts, Biological Abstracts, Chemical Titles, etc. There should be available to him in his local library, a method of obtaining those periodicals which contain articles of interest to him by interlibrary loans.

277 (5) The Forest Products Lab. library carries most needed references and can obtain other through University of Wisconsin Library or Library of Congress.

276 (5) No need for USDA agricultural information in my research. The laboratory library could obtain necessary information if I required it.

272 (5) Chemical Titles, Chemical Abstracts, Biochemical Titles, usually keep us up-to-date on current articles of interest or concern. We can then request copies of articles appearing in journals to which our library does not subscribe. The only problem is the time required for this service, particularly in something of immediate concern. Perhaps a priority system could be devised, with articles pertaining to immediate research problems being obtained before those of general interest.

255 (5) The most pertinent periodicals are received and filed in our office. Others are routed to our office on schedule after routing; these less important periodicals are filed in the regional office. Occasionally, almost once a year, a questionnaire is circulated by our regional office to ascertain the periodical needs of the people in the field. All in all, I believe we have access to most, if not all, the literature of interest in our specialty.

249 (5) Through Bib. of Agr. as done presently, through Forestry Abstracts as done presently, and through Biol. Abs. as done presently, do we keep informed.

208 (5) We should know if all such subject matter by keeping up on our abstracting services, e. g., Forest Abstracts, Review of Applied Mycology, and other such sources. Also, the bibliographies and cirss-crossing literature cited, we do not miss much of importance to our work.

190 (5) No need for periodicals other than those already available locally. Existing coverage already very good.

179 (5) Our station library receives necessary periodicals.

172 (5) Most of the pertinent papers are brought to my attention through the Bib. of Agr., Biol. Abstracts, Forestry Abstracts and other references.

161 (5) In field of forestry, the Oxford Forestry Abstract and cards seem to meet the problem adequately.

147 (5) Most journals are available locally.

142 (5) Publications are adequately provided for locally or by purchase.

138 (5) Bibliography of Agriculture and Biological are generally sufficient for my purposes.

130 (5) I believe that the Bibliography of Agriculture does a good job of this.

122 (5) I think the various abstracting journals fill this need.

101 (5) USDA is doing a reasonably adequate job at present.

074 (5) Present abstracting service appears adequate.

004 (5) The Bibliography of Agriculture and the Engineering Index are adequate.

044 (5) Adequate facilities are available here.

669 (5) We receive copies of Current Contents which is a very satisfactory coverage of recent publications.

Question 21 - Have you any comments on the cross-referencing in the annual subject index of the Bibliography of Agriculture ? If so, please make them here:

Question 22 - Please comment on any aspect of the Bibliography of Agriculture that is not covered by the preceding questions:

The responses to the above questions were classified into broad categories and are shown on the following pages.

<u>Comments Classified</u>	<u>Number of Responses</u>
1. General	32
2. Promptness of Publication (includes timeliness of material)	8
3. Subject Index and Indexing	26
4. Formats and organization of materials	21
5. Citations	28
6. Scope of coverage	18
7. Classification	4
Total Comments	137



## GENERAL

829 The Bib. of Agr. is an extremely valuable source of information. There are a number of alternate abstracting and bibliography services pertinent to my work, and I avail myself of these exclusively through force of habit, and indoctrination, and partly through fear of overspecialization.

800 Nearly all my abstracting is from Chemical Abstracts, but occasionally for a product like vitamins or enzymes there is need to go to the agricultural or biological abstracts.

746 The present nature of my current research seldom requires the use of this publication.

673 It is a very good publication and it should be continued.

594 I especially look at the translations listed in each issue. This is, I've found, a good place to find valuable translations, especially of Russian work.

I've been mystified by the number of "Will continue to search for" replies returned on requests of references given in Bib. of Agr.

502 It seems adequate to me, although occasionally, there is an article which is not cross referenced.

442 I find the cross-references helpful and adequate.

436 Cross-referencing is always helpful in locating pertinent reference material on a given subject.

429 Considering its broad scope, this is an excellent tool; I could not get along without it.

423 Excellent from a practical standpoint. If possible, each field station research worker should have a set.

403 Since I work at an isolated station, I find it very helpful in keeping abreast of new developments in my specialty.

380 Bibliography of Agriculture is the best reference periodical we have as its coverage is more complete than Biol. Abs. or the Review of Applied Entomology, which we also use for reference.

379 I think it is very good and should be continued in about its present form.

304 Some years ago when I was in other work and did use the Bibliography of Agr., it appeared to be thorough and well organized.

279 Many research workers in the USDA are not directly concerned with agriculture as such, but rather with the many different sciences and skills needed to analyze, develop, manufacture and promote agricultural products. Thus, questions regarding this particular publication simply are not relevant in many cases.

269 We've found it very complete and an efficient source.

022 I feel that the cross-referencing is adequate.

430 I look over the entire portion devoted to Plant Science, and a small section in Soil Science - about 60 to 70 pages each month. This takes 5 to 6 hours mostly out of my week ends, and reveals usually between 15 and 20 references of likely interest. A lot of time, certainly, just to find the references, but I see no way how it can be done as well any faster.

076 I usually spend 15-30 minutes in each month's issue and enter research reports in my IBM cards or check to see if I have already entered them.

037 About as simple and clear-cut as can be made, considering the scope and volume of materials cataloged.

The list of publications by State Colleges and Experiment Stations is exceedingly helpful.

911 Much of my work in recent years has been dealing with the technical engineering aspects of studies in the field of hydrology. It may not be representative of those which you wished to cover in the questionnaire. I do not believe either the Bib. of Agr. or Biol. Abs. should be expected to completely cover the subject matter in which I have an interest. However, I believe both of them to be of considerable value to me.

I hope the peculiarities of my work as above mentioned will be considered in the evaluation of my answer.

745 I prefer Chem. Abs., Bio. Sections.

719 Since my chief area of interest is in chemistry, dealing with the properties of and chemical modification of protein, this bibliography is too general and inadequate for my purposes.

680 Seems a little too complex.

642 I find Bib. of Agr. a poor secondary reference in my work. I have used it for foreign references to find it contains almost entirely listings of popularized articles, which, at best, give only indication of work, but no technical data. Animal Breeding Abstracts much better for me.

603 The bibliography contains much that I am not concerned with and have only very minor need for.

560 For my own work I find Chemical Abstracts more pertinent than the Bib. of Agr. I use the former a great deal.

439 Biological Abstracts has been much more useful than the Bib. of Agr.

406 The Bib. of Agr. is not of much value in our research program.

404 Bib. of Agr. does not, it seems to me, supply a unique service not already performed by Biol. Abs., or BASIC, or various other similar publications.

270 No cross referencing, classification by principal topics (also by inexperienced personnel) make it a real chore to cover the 5-10,000 titles in a Bibliography of Agriculture. Number of forest genetics publications and related publications are buried in almost every plant science section. I think the Bibliography is a magnificent service, and one that needs additional financial help plus experienced technical help support in order to cross reference, expand services, and increase accuracy in determination of principal subjects.

383 The Bib. of Agr. is helpful as far as it goes, but the information in Zoological is designed to be more useful for our special endeavor in cataloging the species of the whole world, group by group. Our daily requirements are such that keeping up our office catalog file is the best system. If the latter is done thoroughly, there is no need to make a special exhaustive review for each individual topic that comes under investigation. Within a limited specialized field an experienced worker develops personal contacts that help greatly to keep him informed about other workers and what is occurring in the field.

#### PROMPTNESS OF PUBLICATION

490 Appreciate the prompt printing of titles.

509 Indexes should be prompt.

235 (22) I realize it takes time to compile references, but it seems to be six months or more before published papers appear in the Bibliography.

523 Often papers are not indexed for months after they are published. Greater effort to get current literature listed would be highly desirable.

552 Although editorial problems are appreciated, I feel, that the time lag between publication of a paper and its inclusion in Bib. of Agr. is too great.

573 References published as current abstracts are often 2 or 3 years old.

020 This cross-referencing is the most useful feature about the Bibliography. It helps to weed out those articles we don't want, as well as to guide us to those we should read. Would be useful at a more frequent interval.

641 Not current enough to use for keeping abreast of the field. Useful for literature review, however.

#### SUBJECT INDEX AND INDEXING

248 The Bibliography of Agriculture does a good job of this. The annual index is particularly helpful.



506 It takes me about 2 to 3 hours to read all the reports on plant physiology in an issue. I frequently find the most pertinent articles are in journals that I have. I expect to make greater use of the annual subject indexes than in the past.

443 Would be more helpful to have such an index with each issue. By the end of the year have already spent much time on each current number. For our particular needs we have to search through practically the entire issue.

097 I would like to see this subject index regularly.

042 They sometimes seem a bit repetitious, but this probably is necessary. Generally, I'm very satisfied by the format.

248 Subject index should be as complete as reasonably possible.

898 I believe the cross-references to be useful in that it lessens the likelihood of a reference being overlooked by the systematic literature searcher.

258 Occasionally I find a paper, with which I am previously familiar, cited in only one subhead of the Bibliography of Agriculture, when actually it should have been cited in at least two. This probably doesn't occur too often.

333 My major field of interest involves directly plant breeding and genetics, as well as entomology and indirectly plant physiology, cytology and pathology. Papers concerning plant resistance to insects are sometimes cited under any one of these above listed subject headings. It is, therefore, necessary for one to cover all of these subject headings in order to avoid missing a title of interest. Since I primarily use the Bib. of Agr. for current references, a general subject heading of plant resistance to pathogens and insect pests would be of benefit to me.

290 Forestry abstracts more specific.

252 Subject-matter cross-referencing seems adequate, but how can one ever know without specifically testing subject-matter retrieval for a specific group of previously classified documents ?

The Bib. of Agr. is the most comprehensive service I know of. It is not the most useful because it does not contain abstracts.

640 The word index system used by BASIC could improve the Bibliography of Agriculture.

849 Seldom use it. Prefer Biol. Abs. for my specialty. Have used Bib. of Agr. intermittently. The BASIC index of Biol. Abs. is excellent. Bib. of Agr. might profit by adopting the method.

476 Listing of a reference only under one heading in each issue makes use of the Bib. more difficult for some references.

565 Indexing is not specific enough. It takes too much time to search out pertinent information. A system such as the EJC indexing and retrieval system is much needed and should be of great value.

667 It would help if all subjects listed under Veterinary Medicine were in a section by themselves instead of separate listings under the animal species. It would be much more helpful if specific diseases were listed.

521 A finer breakdown of subject matter in each issue would be helpful and time saving on the part of the researcher, but would burden personnel who compile the bibliography. For example: weeds and poisonous plants could be broken down into weeds in field crops, range weeds, aquatic weeds, woody plants, effects of herbicides on soils, humans and livestock, etc.

694 Cross-references to minor parts of articles would be more helpful. Methodology not covered adequately and not always accurately in abstracts, but this is a fault of most abstracts where methodology is only a minor part of article.

411 The long list of numbers in the indexes make it most tedious to use. We need more clues in the index.

646 The present index requires considerable scanning to find pertinent articles. I think it would be very time saving to have a word-index such as Biol. Abs.

579 While I realize that it takes longer to index by subject than by authors, I find an index by subject much more usable; I realize that the time factor may make this way of indexing impossible monthly.

425 It is not as comprehensive as it might be, otherwise generally good. If other research workers have as little use for the author index as I, perhaps the time and effort in its preparation might be better spent on expanding the subject items.

167 Word index system often too brief to know if reference is of any use. Ag. Index type of subject cross references are more useful with much less journal coverage in Ag. Index.

Title listings with occasional word for species covered in article is acceptable, but a few additional key words might help in searching for related pages. The idea is to save time and not have to dig out unusable articles.

105 It contains a good bit of unimportant material.

028 Try looking up research on Agricultural Adjustment in the last 2 annual subject matter indexes. It's fine to have, but I would hate to depend solely on this for completing a review of literature.

293 Question the need to include references to articles published by State Extension Agencies in two places in the publication.

#### FORMATS AND ORGANIZATION OF MATERIAL

020 Author index would be more useful if the field in which he (author) contributed were placed after his name. We can't always distinguish between the various Smiths, Browns, etc., and we waste time finding the right one.

200 Too often the translated title rather than the original title of an article is given. This makes it difficult to request the correct article from the appropriate periodicals.

508 Sometimes it is difficult to determine location of author or institution referred to in citation. Up foreign literature.

262 Inclusion of authors' addresses would be very helpful so that reprints could be ordered.

374 Very efficient method for locating papers containing specific subjects. It would be very helpful for requesting reprints of publications in the addresses of foreign authors were included with the abstract as it appears in the Bib.

504 Appears to be satisfactory and quite adequate. Bibliography of Agr. I prefer for organization over BASIC, but maybe that is because I need more practice in use of the latter.

387 I have found it satisfactory for special research, but most cumbersome and impossible to use for general corroborative reading. I consider it no substitute for seeing the table of contents or a selected group of periodicals.

255 I find it difficult to read - perhaps it is the style of the type used. Very tiring, but this may indicate need for glasses.

254 The Bibliography is cluttered with references, has poor readability, and does not invite critical examination.

222 My only complaint on Bib. of Agr. is on the poor quality of the printing. I could scan titles faster if it were not necessary to stop and decipher tilted or blurry titles.

212 Underlining of authors, numbers or titles or slight increase in space between entries would speed scanning. Any device which would interrupt the "flow" of printed lines would help. The present bold type is not adequate.

852 It is terrifically difficult to read in the type and format presented.

215 Indexing by subject matter such as soils moisture with appropriate subdivisions such as storage, movement, etc., would help.

464 I see it only erratically. A personal copy would help, but would present a storage problem. I am frankly interested only in genetics and cytology sections. Would it be possible to provide such restricted parts? Biol. Abs. will not try this; I have asked.

770 The titles should be given first in bold type. The names of the authors should be in the smaller type. See set up in Chem. Abstracts.

296 Not considering the economics of the idea, the Bib. of Agr. would be more useful if fewer subjects were contained in one issue bound together. Separate copies for the general division (Table of Contents) such as Plant Science, Soils and Fertilizers, Forestry, etc. or for 2 or 3 related divisions would speed up use of back issues and make the whole process more palatable.

259 Would be nice if summaries could be given, at least in my field.

041 Bibliography, because of volume of work covered is very time consuming for researcher.



173 It seems to be getting far behind; would like to see separate section for forest tree breeding.

131 Seems adequate. Scope of Forest Economics and Forest Utilization makes it necessary to scan entire section on Forestry to search out reference items.

067 Can't the item number also code the material as to type? It could contain a serial no., a designation such as TB, MR, P, O for Tech. Bul., Marketing Research Report, Processed, Other. This would save a lot of looking up now required in addition to scanning. So also would language notation (F) for Foreign.

#### CITATIONS

159 More information on content of foreign publications. Translated title and even a one-sentence summary would be helpful.

247 Abstracting of major articles would be helpful.

205 Abstracts would be more useful than a mere listing.

027 A short statement of the content of each listing would be helpful, as titles frequently tell little of what the research is really about.

170 Titles often fail to indicate nature of contents of papers.

178 Biological Abstracts and Bibliography of Agriculture: I have discontinued using both of these because the yield didn't equal the effort. These both contain references of peripheral nature to my main line of work (such as ecology, plant physiology, etc.) and most of the references of real value I run into elsewhere. This is not so much a criticism of the publications as it is an indication that there is too much material there to sort through for peripheral type information.

886 Would be of much greater value if abstracts were presented.

883 Within its restricted abstracting limits this publication is a great service.

875 It includes too many trade journal articles that do not have research data. Since it is not possible to tell from the reference whether or not research data is present, my card file contains many references that are of no value to me.

874 Separate section for Agr. Expt. Station publications unnecessary as long as covered under subject matter. Translations should be listed under subject matter, not only under translations, even though the article was listed already before translation available.

870 I feel that titles of publications are not adequate. They do not always tell the true content of the paper. A short description would be helpful.

854 Because my interests are mainly in rice, I would like to see the section on grain and grain products separated into individual groups in the monthly issues.

788 I think the references in fibers and textiles should be increased, especially those dealing with the processing research of textile fibers.

755 Articles of interest to the chemist or physicist are difficult to find under the present system of abstracting subjects. If the author is known, an article can be found much easier, but, this fact is not always known.

648 Abstracts of inaccessible articles would, of course, be helpful.

618 Some method of indicating whether publications are popular or scientific might be of value, as well as some key word in context scheme.

615 Several times when I have asked for further information the paper is not printed in English. Just a short summary would be helpful.

540 A few descriptive words following the literature citation would appear to increase the usefulness of the bibliography. Titles are not always indicative of content.

535 Regardless of how carefully the abstracts (citations) are searched, a check of literature citations of related articles usually will yield further references not found through the abstracts (citations).

498 Probably fulfills purpose for which designed and would be very helpful if library available to check articles. However, titles not sufficient to determine if text contains pertinent data or information. Unless loan, photocopies or reprints easily obtained, usefulness limited.

441 The Weed Control Section is out of date and badly needs revision. It should contain abstracts of all articles. Scientists could then request abstracts on the section they are interested in. I am not interested Biol. Abs. I am interested in Weed Control Abs. If the Bibliography of Agriculture was the Abstracts of Agriculture and was available and as widely distributed as the Bib. of Agr., I believe such a publication would be of great value and solve a lot of problems. If Abs. of Agr. were assembled in several volumes or sections, scientists could ask only for that section or volume containing abstracts in his discipline or closely related disciplines.

414 This is good for references, but would, of course, be more helpful for some things if it circulated a short abstract.

378 Bee Culture cross-referencing to particular area such as management, behavior, etc. APIS MELLIFERA - as above and any reference to pollution of specific crops, etc. Not enough of the bee literature is listed for easy reference to the highly specialized field of bee culture and pollination and a great deal of time is required to check through and list the few references found.

367 References often refer only to a mention of a specific subject rather than detailed or useful information. Reference should remain specific to general purpose of paper.

339 The Bib. of Agr. is necessarily limited in its coverage and hence, does not offer satisfactory references I need. I need references more nearly allied to the medical sciences and biochemistry.

321 Not detailed enough - I wanted information on a species of mite, but the family was the only item indexed and there were about 10 publications by one author on this family in 6 years, with 3 having reference to this species of mite.

275 In general, The Bibliography of Agriculture has not been too helpful in turning up good references for my particular subject.

126 I do not believe the coverage is complete enough or the abstracts specific enough. It is difficult to determine from titles and short abstracts the true contents of the listed publication.

#### SCOPE OF COVERAGE

761 Too limited in scope.

042 I wish the coverage could be expanded to a wider range of source materials. We often hear of or see references to excellent books and articles only by chance. As a consequence, we have learned to check materials in the HHFA Library as well as use other non-governmental libraries in the area.

052 Would it be feasible to maintain a list of state and federal reports: for example, annual, biennial reports of state agencies, state school bonds, forests, parks, public works, and similar reports of federal agencies. Then reports should be current.

115 Coverage of U.S. literature in forestry good, but not good in foreign and especially these languages. Title only, is too little information. Leads to search for many worthless references.

177 In both Bibliography of Agriculture and Biological Abstracts, there is a dearth of current European Forestry literature.

261 Forest Fire Research deals with fields which are uncommon to agriculture. Therefore, we must rely on abstracts and bibliographies provided by NAS-NRC, American Met. Society, NASA, various engineering societies, U.S. Weather Bureau, etc.

371 Thesis and dissertations are not abstracted - this is important source of information.

402 Coverage of nontechnical publications seems excessive if it is to be of great use to a research scientists. Other abstracts are better in this regard.

584 This is purely a selfish comment, but there is no subject area on hydrology. I must look through all the papers on soil physics, irrigation and drainage, etc., to note a few papers having to do with hydrology.

600 Bibliography of Agriculture does not carry specific reference to water conservation research.



686 Compilation very inadequate for nutrition research. Reports from limited number of labs. Limited to land-grant colleges. Cover small percent of literature. Mingles research, secondary and popular publications all in one list. Subject classification unsuitable, e.g. confuses nutrition and cookery; papers on biochemical research scattered and buried; no cross-referencing by agricultural commodities; more adequate for production than for consumption of agricultural products.

Now too many indexes competing with each other for subscriptions of libraries and scientists. Some are still in highly experimental stage, most have too broad coverage for the competence of the abstracting staff. Why cannot Bib. of Agr. cooperate with leading technical professionals to consolidate and improve services, eliminate duplications, as Index Medicus has done recently in cooperation with the American Medical Association?

910 Bib. of Agr. has very little on forest recreation research.

808 Does not cover Patent No. Indexes or foreign.

802 The Bib. of Agr. is available in our library, but it does not cover chemical work on tobacco and tobacco smoke which is my field.

795 Our interest in general biochemistry is not very well covered, but this area is well covered in Biological Abstracts or Chemical Abstracts.

664 Does not adequately cover the field of my interest. (Virology) Cross-referencing is somewhat confusing.

794 I have not found an abundance of material published in my field anywhere. (Bio-chemical microbiology)

265 The selection of material included has not been too helpful in my particular case. (Plant pathology - Forest tree disease).

#### CLASSIFICATION

161 In former years when I used it, the B. of A. classification of forestry field was far too broad to be of much help to me.

026 It is my belief that the Bib. of Agr. probably does its poorest job in the field of Agricultural economists. I suppose that this might be improved by classifying titles not only by subject matter, but also by publisher, e.g. Cattle Feeding in Nebraska should probably appear in the Agr. economists section if published by ERS or an Agr. Econ. Dept. and in the feeding or animal husbandry section if published by ARS or an animal husbandry department.

023 Certain of the social sciences cross-classification need review to see if they adequately serve these needs. As I recall, the break down for Agr. Economics was inadequate. Our agr. economist was discouraged from using it.

003 My only criticism of the B. of A. is that there seems to be no set criteria for classifying agricultural engineering literature. Frequently there are more useful references in my field included under "Grain Products" than under agricultural engineering.

654 I would like to see our USDA library set up a clearing house of translations that are available to various laboratories over the country. This is not a translation service, but would be a cataloging of translations available. It is a waste of time for people in two different laboratories to translate the same foreign article. We are at present exchanging translations with the poultry Department of the University of Minnesota and expect to do the same with other laboratories. If such a program could be made part of the USDA Library Service, I would be glad to discuss details.

424 I am very much isolated at this station. The nearest large library is at the University of Maine about 150 miles from Presque Isle. I have had full cooperation from the University as to the use of their facilities. I have also had excellent cooperation from the USDA library at Kingston, R.I. At one time this library circulated a number of publications to me.

A great help to me in solving my literature problem would be to receive a non-circulation copy of the table of contents each month of a selected list of publications. The Agronomy Journal would be an example.

#### Consensus of a Research Division

Most of the questions do not cover the comments we wish to make. We would like to comment on (1) the insufficient supply of literature in the library relating to our research, and (2) failure to keep issues of many periodicals up to date.

One of the major functions of our Division staff is to study the impact of agricultural commodity assistance on the economic development of the underdeveloped countries. Thus, we need access to current as well as less recent books and periodicals over the past decade on the economic, political, and social problems of the countries of Africa, Latin America, the Far East, Asia

and areas of Europe. Many good books have been written recently on these countries, e.g., Yugoslavia and the New Communism, George W. Hoffman and F. Warner; the Arab World Today, Monroe Berger; The Economics of Latin America, F. Benham and H. Holley; and United Nations and United States Foreign Economic Policy, B. Higgins. These books could be obtained from the Library of Congress; however, it takes from one week to ten days to receive materials and then one can only keep them a short time. It would facilitate our research if the library had some special shelves on recent books similar to the ones mentioned above. Since there is an increasing desire to understand alien cultures and their problems of development, the books would probably stimulate readers outside our division.

In addition to recent books, there are some excellent general periodicals, such as Current History and other foreign regional journals which would aid us in our research, but are not available in the library. As we must keep informed on recent developments in various countries, we need the latest issues of many publications in the library. Many times we have needed material in such United Nations publications as "Economic Development in the Middle East, 1959-1961", and have found that the latest issue in the library is 1958 (in the case of the UN journal) and 1950 in the case of many other periodicals. In some instances, we need the materials promptly and it delays our work to wait until the publication is received from the Library of Congress. It would be very helpful to us, and I am sure to other researchers, if the library would keep its publications up to date, make adequate inquiries before terminating subscriptions to periodicals, and solicit requests for new materials to be incorporated into the Agricultural Library.

A suggestion which the Library Task Force may wish to entertain follows:

As the daily flow of incoming literature passes through channels within the Library, is there a point where it could be separated by call numbers before it reaches the room where it is sorted and sent to the stacks? As you know, the literature is filed in the stacks numerically by call numbers, each call number indicating classification of subject matter. Miss C. and I have wished that such a separation point could be in the Bibliography Section. If there isn't room for bins, or boxes to hold the separated literature, paste numbered strips on the big table and pile the literature by call numbers within the spaces indicated by the strips. For example, literature on Economics is in the 280.3 . . . range of call numbers; most of the literature on Entomology and geology falls within the 400 and 500 range of numbers. As the bibliographers and typists finish with the literature, why not put the 200's in one pile, the 400's in another pile, and so on? Miss C. and I, and Mrs. S. from Parasitology, of course, would benefit immediately from such an arrangement. I should think it would be of advantage to the Library operations also. After we have searched the literature the first thing in the morning, it could be kept in piles by numbers (we would not have to look at piles of 200 to find something in 400), then picked up by the trucks which take it into Circulation and thence to the stacks. The literature has to be sorted somewhere before it gets to the stacks; it seems as if that would be a good place to start.

I suppose the people in Bibliography feel that it isn't feasible to keep the literature separated in this way, or they would have done so ere now. Anyway, the suggestion is passed along for whatever it may be worth.



## SECTION FOUR

### THE NATIONAL LIBRARY SYSTEM AS OF 1962

#### TECHNICAL SERVICES

Technical Services is made up of two Divisions -- the Division of Acquisitions and the Division of Catalog and Records.

##### Division of Acquisitions

The Division of Acquisitions develops policies and plans for carrying out an acquisition program designed to acquire publications essential to meet the requirements of a national agricultural library as a storehouse of world literature in the field and as a national reference service to meet needs of agriculture. It is the administrative unit in charge of selecting and acquiring books, periodicals, and other material by purchase, exchange, and gift and of keeping the necessary records.

Three sections perform the functions of the Division of Acquisitions. The Publications Selection Section selects publications in the fields of agriculture and related sciences from bibliographical and other sources; searches selected citations to determine needs; and initiates request for procurement by purchase, gift or exchange. The Order Section issues official orders for the acquisition of publications, receipts publications ordered, and follows up on all orders not filled within specified time limits. The Exchange Section arranges for the exchange of Department publications for those of foreign associations, institutions, governments, etc., and furnishes exchange information to land-grant colleges.

Master logic flow charts for each section of the Division of Acquisitions as well as detailed flow process charts for each section are included in this report.

##### Publications Selection Section

The Section is responsible for detecting, selecting, and initiating orders to acquire publications (monographs, serials, and periodicals) in the agricultural and related fields from a collection of current national bibliographies and other sources on a worldwide basis. Unsolicited publications received from a variety of domestic and foreign sources must also be scanned, evaluated, selected, discarded, or otherwise disposed of by this Section. The printed Acquisitions Policy provides guidance on the scope and depth to which publications are selected and acquired or discarded in specific subject areas.

After determining upon the publications to be acquired, the Section searches selected bibliographical citations against library records to find out if the selected item is already in the collection, on order, or needs to be acquired. Materials can be listed in a variety of ways in the bibliographical literature (by personal name, title, issuing agency, or by subject) and differ from the way it is listed in the Public Catalog. There are not any binding standards for listing materials in bibliographies issued worldwide.

A detailed account of various selection processes follows.

##### Selecting and Searching Bibliographic Citations

Bibliographies, publishers announcements and catalogs, received in the Publications Selection Section are sorted according to geographical area and assigned to the appropriate selection officer for selection of citations of interest on the basis of his or her language capabilities.

Citations are reviewed for subject scope. Prospects are checked with one of four symbols, depending upon whether it is a serial or a separate and will be obtained, (1) by purchase, (2) by gift, or (3) by exchange.

Most citations are photocopied using an LF-317 order form as a mask. The resulting photoprint is used in the search of the Public Catalog and Alphabetical Order File, to determine whether or not the publication is in the Library's collection or is on order, and to obtain possible cataloging information. Photoprints are given to Selection Officers, who pull out all exchange prospects, plus others needing immediate attention. The remainder are sorted by Library Assistant. Photoprints of serial prospects are separated from photoprints for separates prospects and both groups are further sorted on a geographical basis and filed into temporary current citation files until they can be searched.

##### Search for a Separate

The card catalog is searched first. If prospect is already in the collection, a statistical count is made and the photoprint is discarded. If it is not in the collection, but another publication by the same author is in the collection, the author's name is written and underlined on the photoprint, as it appears in the catalog. If there is no difference between the cataloged entry and the author's name as it appears on the photoprint, the name on the photoprint is underlined.

If a different edition is in the collection, the call number of that edition is written on the photoprint. If the same work with a variant title by the same author is in the collection, a reference to the call number is made on the photoprint. The alphabetical order file is then checked. (See on continuing page.)

##### Search for a Serial

Serial Records are checked first. If the serial title is in the collection, but issues are classed as separates, it is searched as a separate as described above.

If the serial is in the collection, the call number is written on the photoprint in block 6. If the entry in Serial Records differs from the way it is given in the photoprinted citation, and the issues are lacking, the correct entry is written in block 1 and underlined. The Serial Records are simultaneously searched to determine specific holdings of title being searched. If the issue (s) are



in the collection and no further action is required to insure continuous receipt, the photoprinted prospect is counted and discarded. The card catalog is searched only when more information is required for difficult corporate entries not provided in the serial record files.

#### Alphabetical Order File -- Searching for Serials and Separates

The photoprint is discarded, if prospect is already on order, unless an additional copy is being requested. If the prospect is not on order, the searcher completes ordering information, such as dealer, price, and appropriation, and submits order for approval. (The Alphabetical Order File may disclose information resulting in a decision not to order or to defer ordering the publication. Inasmuch as this information is of miscellaneous character, varies considerably, and is infrequently relevant, no attempt has been made to detail this on the flow chart.) Approved purchases or gifts are sent to the Order Section, and exchange prospects are sent to the Exchange Section. Prospects which are not approved are discarded. Approved prospects for which funds are not available are referred to the desiderata file.

#### Selecting Unrequested Publications

Unrequested publications are received in the Publications Selection Section from various sources, including USDA agencies, other Federal and State agencies. Unrequested publications include all received from domestic sources (gift) and foreign sources (exchange) for which no formal order was initiated. Serials new to the collection, with Process Form LF-312, come from the Records Section which has searched Current Serial Record and the Alphabetical Serial File to determine whether or not the serial is in the Library's collection. When a serial is received in the Publications Selection Section which has not been searched by the Records Section it must be sent there for that purpose. If the search by the Records Section discloses that the serial is not in the collection, it is returned to PSS for selection with the Process Form LF-312. If a serial is selected by PSS, the attached Process Form is checked to indicate selection and other pertinent items, and the claiming address (which is the name and address of the issuing agency or other special source) is put on the form. The serial piece with the Process Form is forwarded to the Catalog Section.

Separates are reviewed for selection by PSS before any prior search has been made to determine whether or not they are in the collection. When a separate is selected an LF-312 is inserted in the publication, dated, initialed, and forwarded to Catalog Section.

A serial or separate not selected is sent to the National Library of Medicine, if a medical publication; returned to GPO if the piece had been issued by GPO; if of substantive value and out of scope, separates are sent to the Library of Congress; duplicate separates and serials to U. S. Book Exchange; or destroyed if it does not meet the above criteria.

#### Publication Selection

(Statistics Pertaining to Selecting, based on 1961-62 figures)

##### A. From Citations

1. Bibliographies handled by title (they may be weekly, monthly, quarterly, etc.)	162 titles
2. Citations selected from Bibliographies	24,500
3. Citations searched	14,700
4. Photo-citations discarded after search	7,500
Serials    3,100	
Separates  4,400	
5. Citations referred to Chief of Division for approval	7,200
6. Approved and order placed for Main Library	6,350
Purchase  4,400	
Gift      250	
Exchange  1,700	
7. Orders pending	850

##### B. Selection of unrequested publications

	7,300
Serials    1,750	
Separates  5,550	

#### Exchange Section

All requests from foreign governments, colleges, universities, societies, and other organizations for Department publications are subject to the exchange requirement and must be cleared by the Exchange Section of the Library. In conformance with established policy, the Exchange Section is responsible for determining appropriate action to be taken on incoming exchange requests and for determining what types of material may or may not be sent on exchange. This Section is responsible for the maintenance and control of a consolidated index of names on the foreign mailing list. New exchanges with foreign sources are arranged on the basis of orders submitted by the Publications Selection Section, titles offered through correspondence and special lists submitted by correspondents. In order to obtain material to fill requests for exchanges, the resources of all agencies are open to the Exchange Section.

#### Order Section

This Section is responsible for the technical processing of all formal orders initiated by the Publications Selection Section.



Processing includes the assignment of an order number in the purchase, gift, or exchange series, as appropriate; the preparation, by photocopying or typing, of multiple copies of each order for various files maintained; mailing out of dealer copies of all orders; distributing and filing the other copies of all orders to the appropriate files.

The Order Section receipts all incoming separates requested on numbered orders and prepares publications to go to Catalog Section. Claiming of non-received publications due on numbered orders is an important aspect of the order activity. This is especially true about serials and periodicals which are of primary importance in a scientific-technical library.

Receipting and claiming of orders are handled by form, i.e., separates or serials. Separates are receipted in the Division of Acquisitions and serials are receipted in the Division of Catalog and Records. A detailed account follows.

#### Receipting Separates

Separates received in response to an order are addressed to the Order Section and delivered directly to the Section from Mail Room. A clerk pulls the appropriate order from the numerical file (OOF) and compares with book for accuracy of bibliographical detail. If the book is correct, the no. 4 copy of the order, any AD-245 requests, or other attachments are detached from the numerical order copy and placed in the book with a Process Form (LF-312). The book is then placed on the "new" book truck. This truck is taken to Catalog and Records Division once every day. The numerical order is stamped on the front with date of receipt. If it is a purchase order, the corresponding Alphabetical Order copy is pulled from the AOF file, stamped on the verso with the date of receipt, and refiled; receipted numerical order copy is sent to the Budget and Fiscal Section for accounting action. Receipted Gift and Exchange numerical order copies are filed in the appropriate Gift and Exchange receipt files.

#### Claiming Separates

Domestic separates are claimed by regular mail within 2 weeks of the date ordered; foreign separates which are always ordered by air mail are claimed within 1 month of the date ordered. Claiming is done by means of a photoprint of a claim form superimposed on the order form. Claims are made twice by photoprint; the third claim is made by a form letter and if necessary is followed up by a special letter. If no response to these claims, the order is referred to the Publications Selection Section for advice on further steps to be taken.

#### Receipting and Claiming Serials

A separate numerical file of all outstanding serial orders is maintained--the OOF file. All serial issues are receipted in the Records Section. Each new order in the outstanding numerical order file has attached a colored signal indicating when claims are to be made on a regular schedule. Receipts which take the form of order copy 4 or 5 or both, Serial Issue Receipt (LF-301) or CSR claim form (LF-316) are stapled to the original order LF-317 which is withdrawn from the outstanding order file. Action taken depends on whether serial is acquired through purchase or gift or exchange.

#### Gift and Exchange Serials

Receipted orders are received from the Records Section. A receipted order is cleared by pulling the form from the numerical file (OOF) and placing it in the receipted Gift and Exchange file. At the time of this report, claiming of gift and exchange serials was done in Division of Catalog and Records, but this was changed to Division of Acquisition in 1963.

#### Purchased Serials

Receipted orders are received from the Current Serial Records unit. When first issue due is received, the claim signal is removed from LF-317. If an issue later than first issue due is received first, the Periodical Claims Assistant promptly claims missing issues. When missing issues received after first issue due have been received and later issues due are still to be published, the claim signal is removed. When all issues due on an order have been received, the LF-317 with attachments is forwarded to Budget and Fiscal for accounting action.

Claiming is done in accordance with a pre-determined claim schedule. A photoprint of a claim form placed over the CSR entry is used to claim missing issues. The date of the claim is postdated a week ahead on the claim form; the LF-317 is dated on the verso each time a claim is sent. Claims are made only twice by photoprint. When the LF-316 is used for second claim, stamped prominently on the form prior to photoprinting is "Second Request". If no reply is received in answer to the first two claims, a third claim is sent by form letter. If no reply is received to this form letter, original correspondence is signed by the Chief of the Division. If no reply is received to this fourth claim, the order is referred to Publications Selection Section for further advice and investigation.

There are three annual follow-ups on missing issues: March 31, July 31, and November 30. All titles are searched in CSR for holdings information. Issues still due on an order are listed on back of no. 4 receipt copy of order. "Acquisitions notified" is erased in the missing issue space on CSR card and "b & F notified" is pencilled in. The no. 4 receipt copy is thermofaxed and the thermofax copies filed in the numerical file within each follow-up year. The no. 4 receipt copies are forwarded to Budget and Fiscal Section. No further claiming is done by Acquisitions on these orders; the incomplete orders are returned to Periodical Claim Assistant on July 31 and November 30 for second and third action. All later requests for missing issues and correspondence concerning these orders are forwarded to Budget and Fiscal Section, marked "Annual Follow-up" and the year to which it applies.

#### Order Section Statistics

1. Items Claimed (Including 1, 2, and 3 claims, but not letters).	9, 100
2. Items Receipted (Orders).	6, 800
3. Cancellations	1, 730



### Blanket Orders

At the beginning of each fiscal year, a letter of authorization is sent to selected dealers by the National Agricultural Library. The letter authorizes a dealer to collect publications in the field of agriculture and related sciences issued within his assigned country or area during a specified period of time. The dealer is authorized a specified amount of money to spend in this procurement. For some countries, the arrangement is made through the State Department with the Publication Officer attached to the American Embassy in that country. This authorized agent may deal with one or more book dealers in that country. In such cases, the Embassy Officer is treated as a dealer, and the requisitions or transmittal forms and the publications come from the Embassy through State Department, rather than directly from an individual dealer.

The agents or dealers buy and ship publications on an irregular basis; each does his own selection within the limits of the acquisition policy established by the Library; each may or may not spend the amount allotted to him each fiscal year, depending upon his interest and activity. Payment is initiated upon receipt of the invoice, even though all publications listed in the invoice or shipping list may not have been received. The single exception to this procedure is the arrangement made with the Publications Officer, Amer. Embassy, Moscow. The entire amount of money to be spent is transferred to the State Department at the beginning of the fiscal year.

Shipments received from commercial dealers are accompanied by an invoice, which is processed for payment immediately by the Order Section with the preparation of a confirmation order on LF-317. Shipments received from Publication Officers attached to American Embassies abroad are accompanied by transmittal slips or Operations Memoranda. Payment is not initiated until the invoices are received from the post by the Library's Budget and Fiscal Section. Receipted Operations Memoranda are matched with invoices and confirmation orders are placed on LF-317's. Occasionally, an invoice is received before the publications are received, the accompanying Operations Memoranda are attached to the appropriate invoices and receipt date of publications is noted on carbon of LF-317, attached to Order Section's file copy of invoice. If publications due on paid invoices have not been received by the end of the fiscal year, the matter is referred to the Chief of the Division for action. Dealer folders are set up at the beginning of each new fiscal year. Folders for the current fiscal year and the two preceding fiscal years are held in an active Blanket Order File. After the third year, the contents of the oldest folders are destroyed. Permanent files are retained by the Library's Budget and Fiscal Section. There are nine current Blanket Order arrangements with commercial dealers and Publications Officers attached to American Embassies abroad.

### DIVISION OF CATALOG AND RECORDS

The Division of Catalog and Records develops policies and plans for carrying out programs designed to best classify, catalog, record and prepare for use library materials in the field of agriculture and related sciences. This Division is made up of three sections. The Catalog Section searches and catalogs acquired technical, scientific, and other material, in all languages; analyzes material and assigns pertinent subjects and classification; authorizes manuscript for cards to be printed and sold by the Library of Congress; develops cataloging procedures, the system of subject headings, and the classification scheme to meet the needs of specialists. The Records Section receives, searches, records or disposes of all serial publications; is responsible for records and files of holdings, and supplies information from these records; shelflists newly cataloged titles; searches for cataloging and for specialized and field libraries; authorizes preparation of cards for other libraries. The Preparations Section prepares publications for use; prepares or acquires, completes, and files or distributes catalog and other cards; maintains the Public Catalog and related files; carries out instructions concerning cataloging, card servicing, and removal of cards from files.

Master logic flow charts for each section of the Division of Catalog and Records as well as detailed flow process charts for each section are included in this report.

A more detailed narrative report of the important functions for each Section follows.

#### Catalog Section

Materials in the form of serials, separates (monographs or books), films, maps or photo-reproductions received in the Catalog Section come from the Records Section and the Division of Acquisitions. Selected publications obtained by the Division of Acquisitions for addition to the Library collection are sent to the Catalog Section from which point they actually enter the Library system. The forms relating to each publication are inserted in the publication prior to delivery to the Catalog Section. The forms are kept with the publications until the forms are disposed of or forwarded with the publication to the next processing location. In the flow charts the term document refers to the publication and its related forms. Process Form LF-312 accompanies each publication and serves as a routing and information device and as a means of giving uniform instructions for work to be carried out in other Sections. In addition, the publication may have with it a photocopy of an order, LF-317, which originated in Acquisitions, and/or a Library Request, AD-245, showing that someone wants to borrow the book as soon as it is ready for circulation.

The publications are sorted and distributed to the catalogers on the basis of priority, language, and workload. Low-priority materials are held in temporary storage within the section until time permits processing. The catalogers represent a wide range of languages in addition to English.

When a cataloger receives his assigned publications, he searches those which need it in the Public Catalog, located in the Division of Reference, to determine that:

1. The title is really new to the Library
2. Cataloging information which he will use for describing his new entry will conform with related information already in the catalog.



In addition, for the U. S. Department of Agriculture publications for which cooperative cataloging information is supplied to the Library of Congress, the cataloger-searcher must determine:

1. Whether the same entry information has been supplied previously to the Library of Congress, and
2. If so, that the same form will be given Library of Congress for the new publication.

All pertinent searching data needed for later action are noted on the LF-312 or the publication itself.

Back at his desk, he disposes of any publications which he found had already been cataloged. He catalogs the new titles and writes additional information on the publication and the accompanying LF-312 to be used in providing identification of the title in the Public Catalog through:

1. Author, title, physical characteristics of the book such as number of pages (Descriptive Cataloging).
2. Subject headings reflecting the content of the publication (Subject Cataloging).

When necessary, elements of descriptive cataloging have already been verified as to established form in the Public Catalog. Each subject heading is verified in the Subject Authority File in the Catalog Section.

The cataloger also assigns the call number for the title; the publication is shelved by this number in the stacks. The call number is made up of two parts:

1. Classification number, which reflects the subject content of the book and is selected from the Scheme of Classification for the United States Department of Agriculture Library.
2. Cutter or Book number, which is based on the author's name and is assigned from an established list of such numbers, C. A. Cutter's Two Figure Author Table.

To assure that no two titles will have the same number, the call number assigned by the cataloger is adjusted by adding a number or a letter when necessary to avoid duplication. This adjustment, which is called shelflisting, is performed in the Records Section.

Certain special types of materials are not given call numbers. They are numbered in consecutive order as processed. These are films, and translations of articles from periodicals and chapters of books.

After all necessary instructions have been noted on the LF-312, it goes with the publication and other attachments, if any, to the Preparations Section where, on the basis of these instructions, the necessary cards are prepared for the Public Catalog and other files and the publication is made ready for shelving in the stacks.

On the basis of the present rate of activity, the Catalog Section expects each year to receive and act upon about 13,600 apparently new publications. About 11,700 of these will actually require cataloging action; the remaining 1,900 will, upon being checked in the catalog, prove to be copies of previously cataloged publications.

New Cataloging  
Estimates Based on 1961/62 Figures

	<u>From Acq.</u>	<u>From Records</u>
1. With order	1800	
2. Blanket orders	960	
3. Gifts	5500	
4. Cooperative cataloging for Library of Congress	40	500
5. Author analytics		2000
6. Translations	900	
Total	9200	2500

Grand Total received and cataloged - 11,700

In addition, the Catalog Section will need to take action to bring up to date information about previously cataloged serials which have undergone changes in their publishing patterns. There are about 4,500 such cases each year.

Old Cataloging to Be Updated  
Estimates Based on 1961/62 Figures

	<u>From Records</u>
1., Changes of title or issuing office	1100
2. Ceased publications	600
3. Information services (supplements, special numbers, numbering irregularities)	2800
Total	4500

Omitted from the charts are cataloging activities so few in number each year as to have no appreciable effect on the picture; the following figures are estimated on the basis of statistics for 1961/62:

1. Serials which have resumed publication after having ceased - 20
2. Titles which are recataloged - 3

### 3. Old entries reworked - 30

Also omitted are administrative, training, and related activities which are essential to the operation, but are not reflected in a flow-chart presentation.

#### Records Section

Publications are delivered to the Records Section from the mail room and from other sections of the Library. Most of the publications are issues of serials. Some, though, are books received in error or copies to be added to the collection; the flow of these is touched on only briefly in the charts because serials work in the major function of this Section.

Issues of serials are sorted at the mail desk. The noncurrent publications are forwarded to the Alphabetical Serial File (ASF) of the Records Section. The ASF contains the holdings records of serials published prior to the years considered current. At the time of this report the current years began with 1958. At the end of 1963 the triennial transfer of older current records to ASF will take place. At that time, 1961 will become the beginning current year.

Current numbers of periodicals are batched by the mail assistant by the first letter of the title. These batches are then transferred to shelves to await action by the checkers in Current Serial Record (CSR), the other unit in the Records Section.

Each CSR checker is responsible for one part of the alphabet. He removes one letter batch at a time from his shelves and arranges the pieces in alphabetical order; then he searches each piece in his checking file. If the title is not located, the publication is forwarded to ASF for verification of the fact that the serial is not in the collection. These cases are forwarded by ASF to the Division of Acquisitions for selection. If the title is located and the piece has not previously been recorded, its receipt is noted on the appropriate card. If another copy of the same issue has been recorded previously and fills the need of the collection, the piece just received is sent to the United States Book Exchange to be made available to other libraries.

In broad strokes, this describes the main activities of the Records Section. There are many details involved which show up in the flow charts. Some must be mentioned here because of their relation to other sections.

Because of the funds involved, purchased serials are given special attention. The checkers report to the Division of Acquisitions the receipt of issues due on purchase orders. Checkers also notify Acquisitions when an issue of a purchased title is received and the previous one is missing and should be claimed; CSR claims for nonpurchased periodicals.

The bindery staff, Division of Lending, relies on the Records Section to report completed volumes of serials which should be picked up for binding. The notification is in the form of a photoprint of the records card which shows all parts needed to assure that the bound volume will be complete.

In order for the Library users to have available in the catalog the latest bibliographic approach to the serials collection, CSR forwards through ASF to the Catalog Section any journals which have changed their titles or require other cataloging action. Details about such changes and holdings information are furnished, upon request, by a telephone service provided by the ASF assistants.

Some estimated serials statistics, based on 1961/62 figures are given below:

1. Periodical issues received	400,000
2. Periodical issues recorded	200,000
3. Reports to Acquisitions of ordered serials received	4,200
4. Binding notifications	7,800

In addition to the serials work, the Records Section is responsible for some other functions. Its Shelflisting activities have already been referred to in the description of the Catalog Section.

The Records Section also authorizes the preparation of catalog cards for branch libraries and maintains a record of publications loaned for an indefinite period of time to Department officials.

#### Preparations Section

This Section carries out instructions originating with the catalogers. In addition, the Preparations Section fills requests for card and book preparation from the Records Section and from the Division of Acquisitions.

On the basis of established procedure or specific instructions the library assistants in this Section add accession numbers and identifying labels to publications before the books are made available for circulation. These assistants prepare or acquire cards for the Public Catalog and other files of the Main Library and for branch and field libraries. Necessary changes on old cards are also made by this Section.

Besides preparing cards and books, the Preparations Section maintains the Public Catalog (about 2,000,000 cards) and related files. This includes filing and withdrawing cards, as well as guiding and expanding the files as needed.

The following selected figures, estimated on the basis of 1961/62 statistics, give some idea of the rate of activity:

1. Volumes accessioned	12,000
2. Permanent cards prepared	70,000
3. Old cards serviced	13,800



T E C H N I C A L   S E R V I C E S

MASTER LOGIC FLOW CHART

Division of Acquisitions

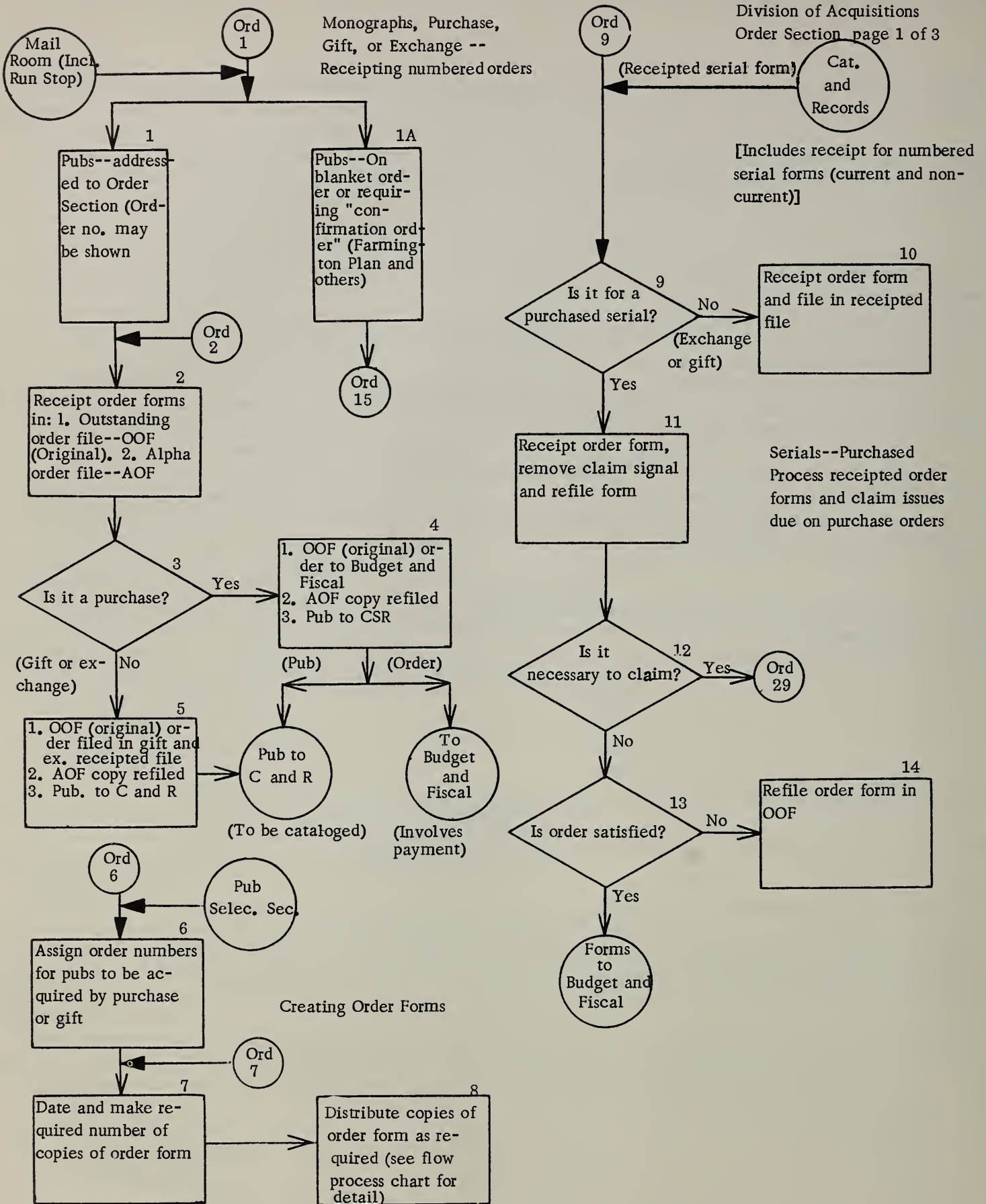
in three parts

Order Section  
Publication Selection Section  
Exchange Section

Division of Catalog and Records

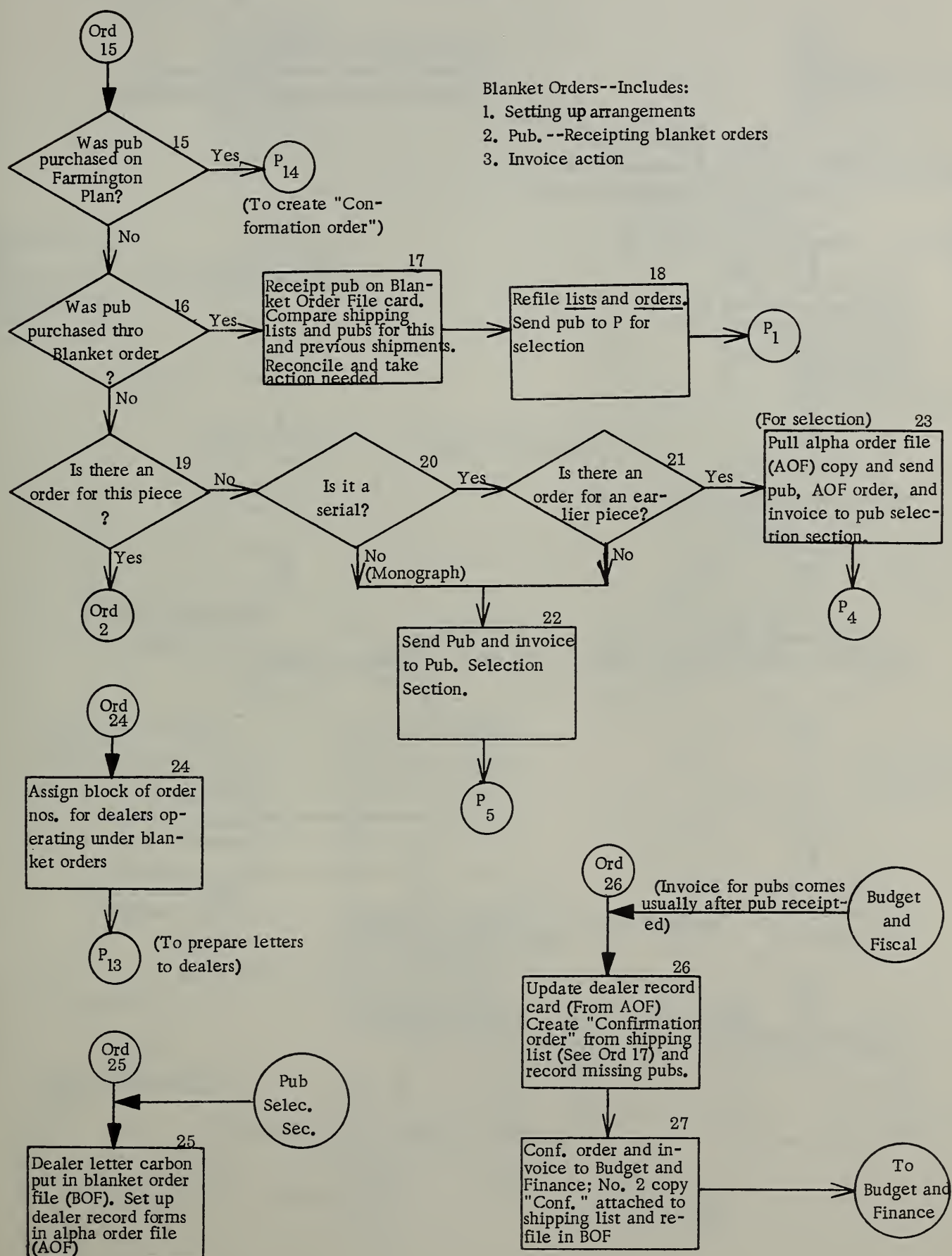
in three parts

Catalog Section  
Record Section  
Preparations Section



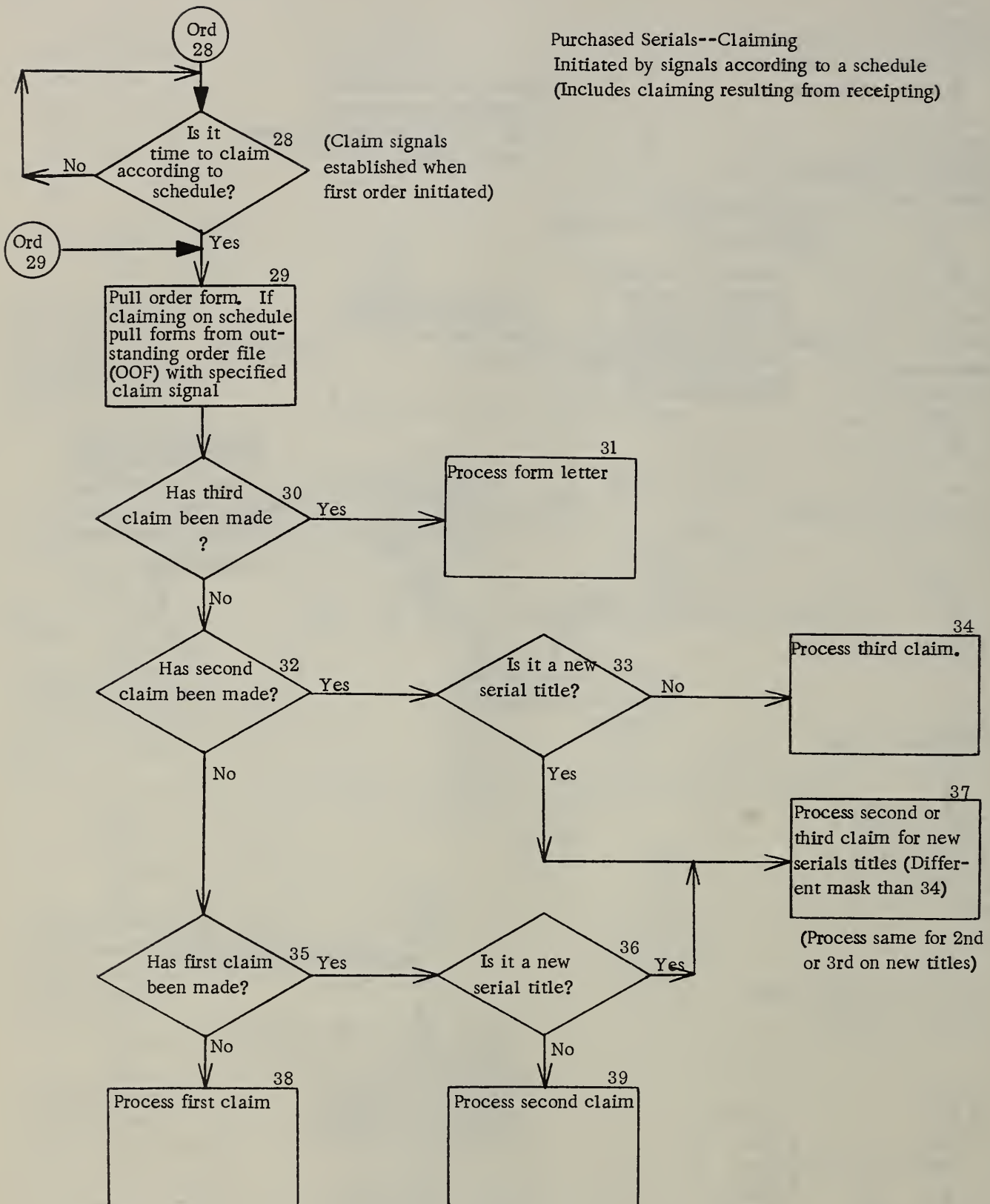


MASTER  
LOGIC FLOW CHART  
Division of Acquisitions  
Order Section  
Page 2 of 3



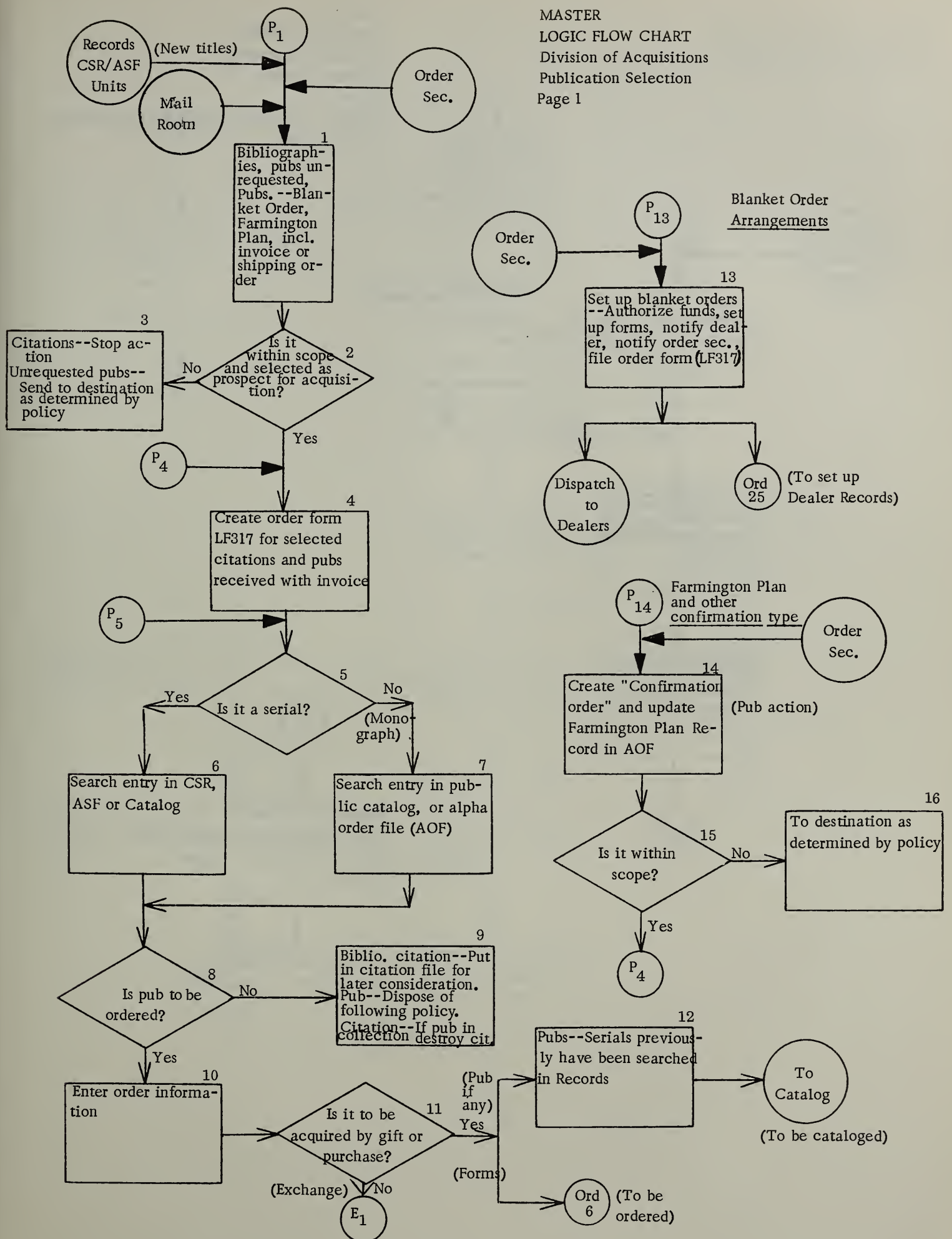
MASTER  
 LOGIC FLOW CHART  
 Division of Acquisitions  
 Order Section  
 Page 3 of 3

Purchased Serials--Claiming  
 Initiated by signals according to a schedule  
 (Includes claiming resulting from receipting)



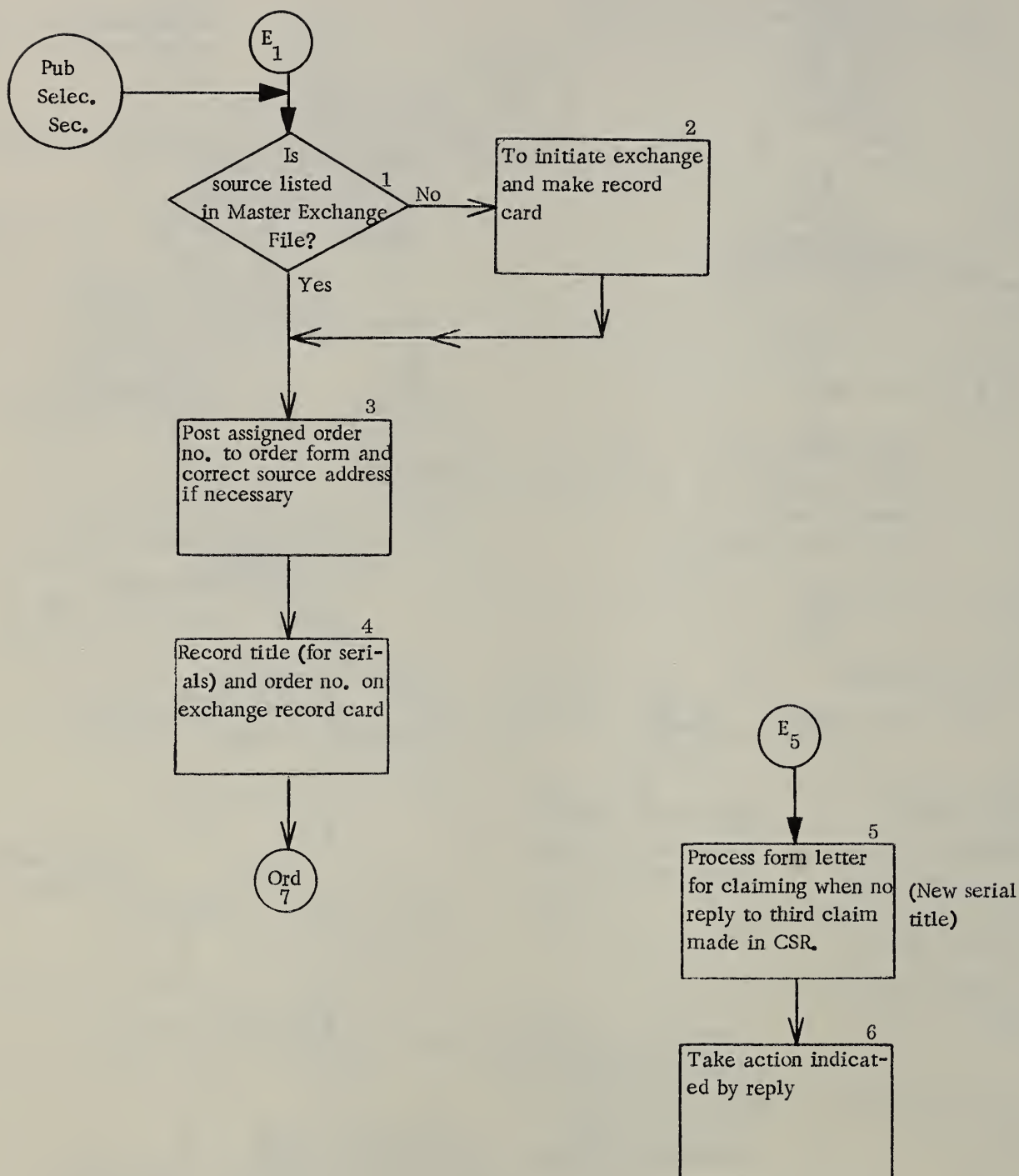


MASTER  
LOGIC FLOW CHART  
Division of Acquisitions  
Publication Selection  
Page 1

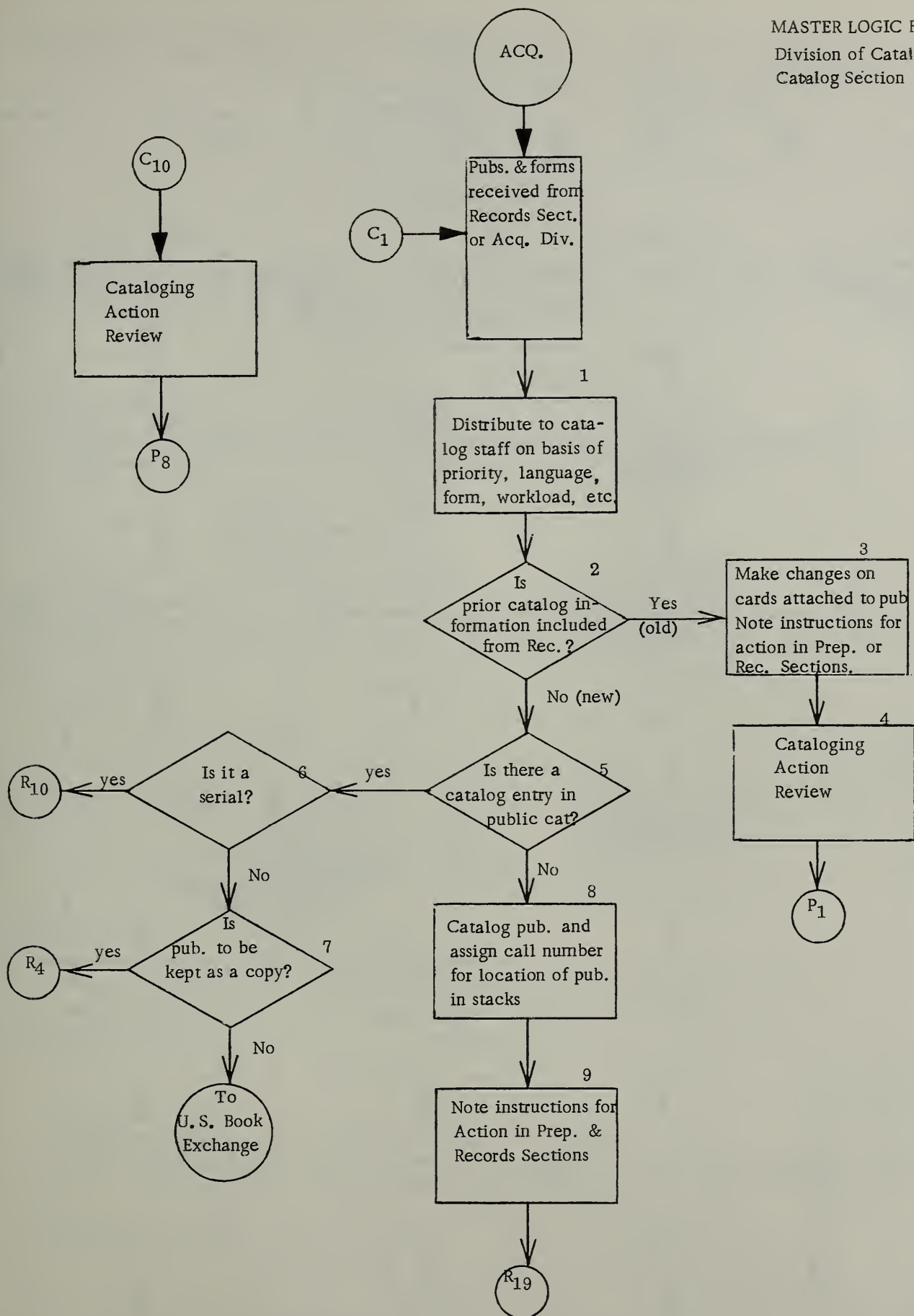


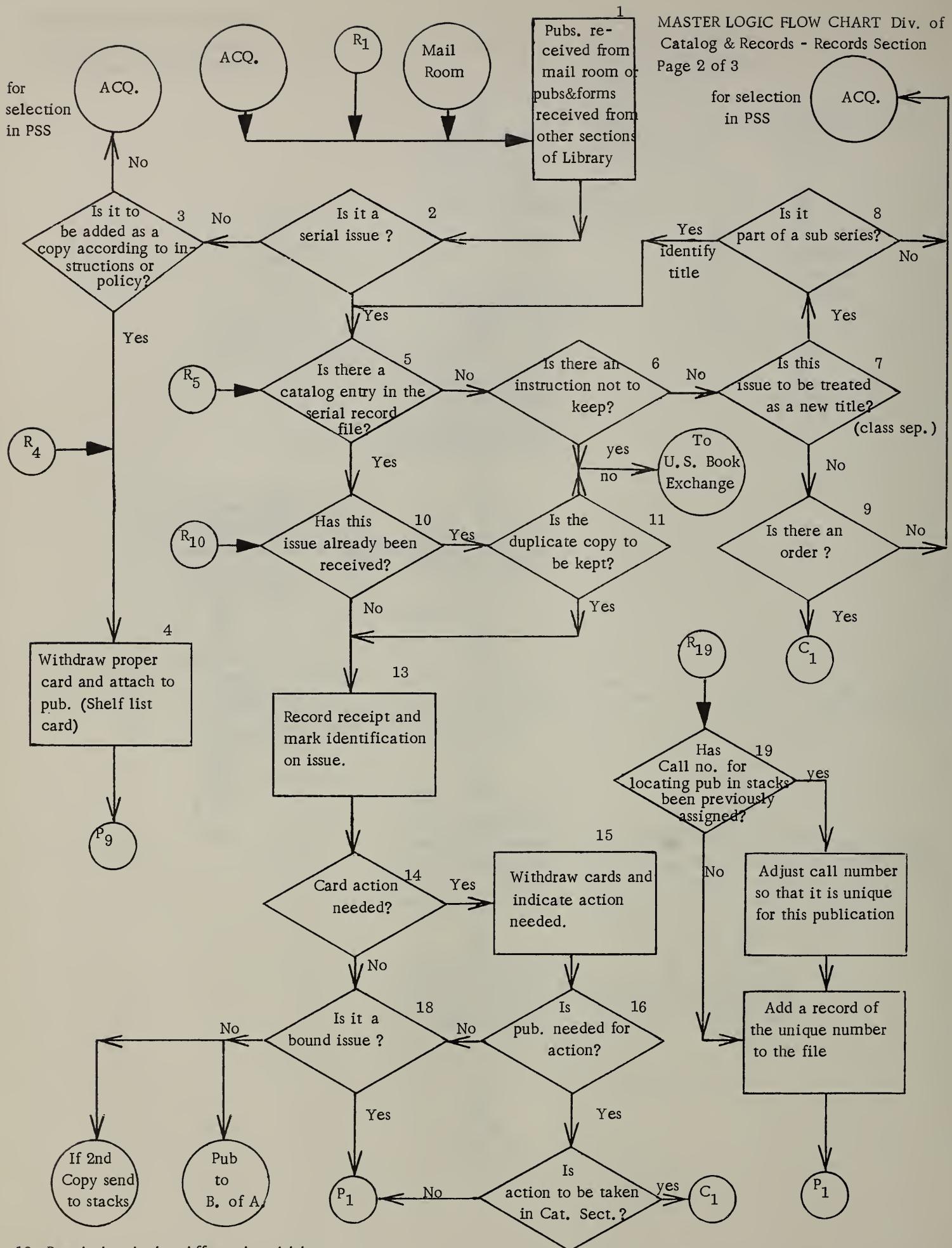
MASTER  
LOGIC FLOW CHART  
Division of Acquisitions  
Exchange Section  
Page 1

(This is a small part of total work assignment  
of this section)







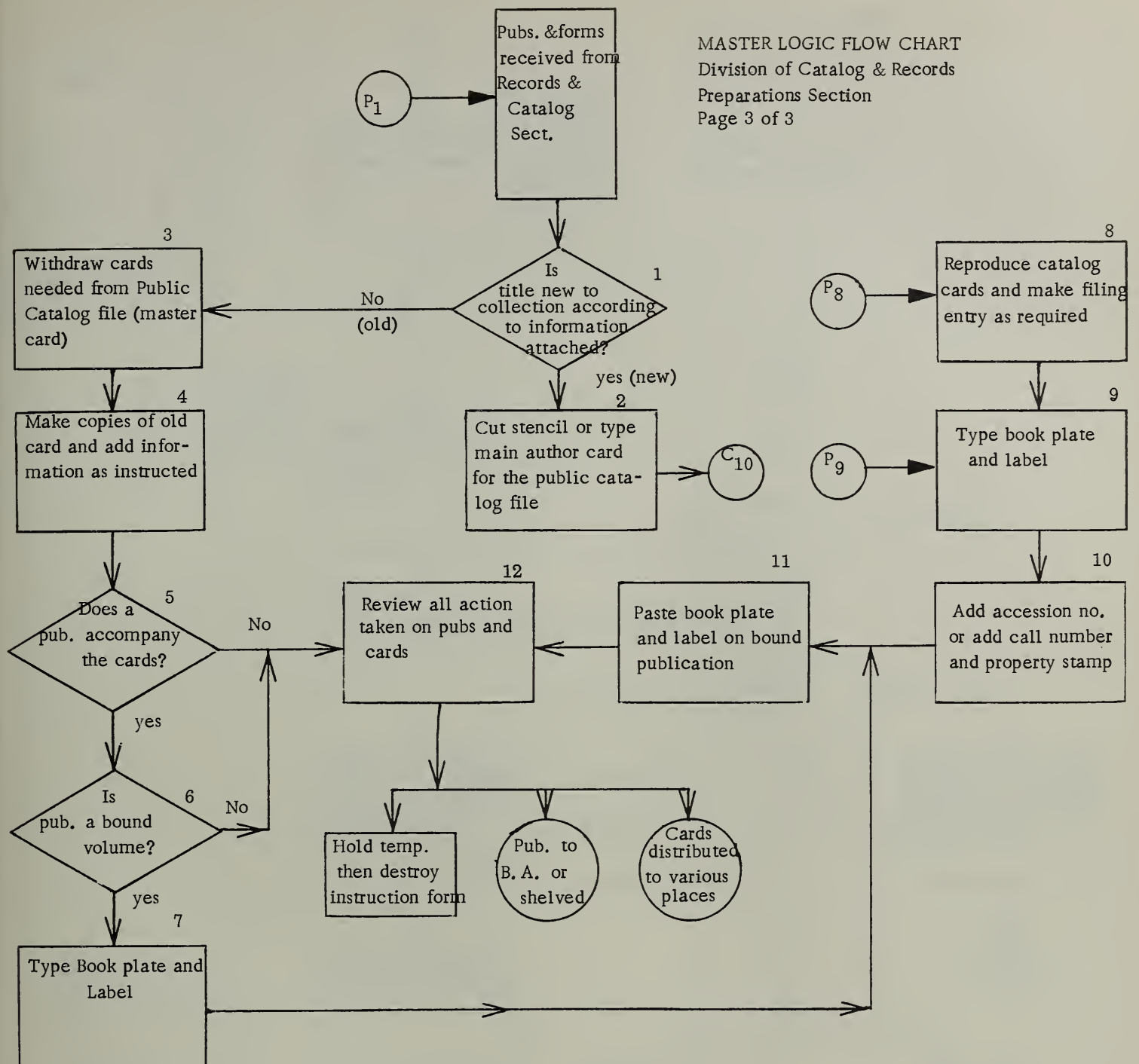


### 13. Receipting Action Affects Acquisitions:

(1) Requires order action as it may release order, or show order completed, (2) Triggers claiming action as it may create or satisfy a claim. [Gift & Exchange 1st & 2nd claims made in Catalog & Records Division up until Jan. 1963]



MASTER LOGIC FLOW CHART  
Division of Catalog & Records  
Preparations Section  
Page 3 of 3



Note: After 1/63 only selected list of pubs sent to B. of A. Prior, and on these charts, most pubs went through B. of A. even though not indexed by B. of A.

T E C H N I C A L   S E R V I C E S

DIVISION OF ACQUISITIONS

Order Section

Flow Process Charts

16 pages

Blocks codes OR 1 - OR 153



# FLOW PROCESS CHART

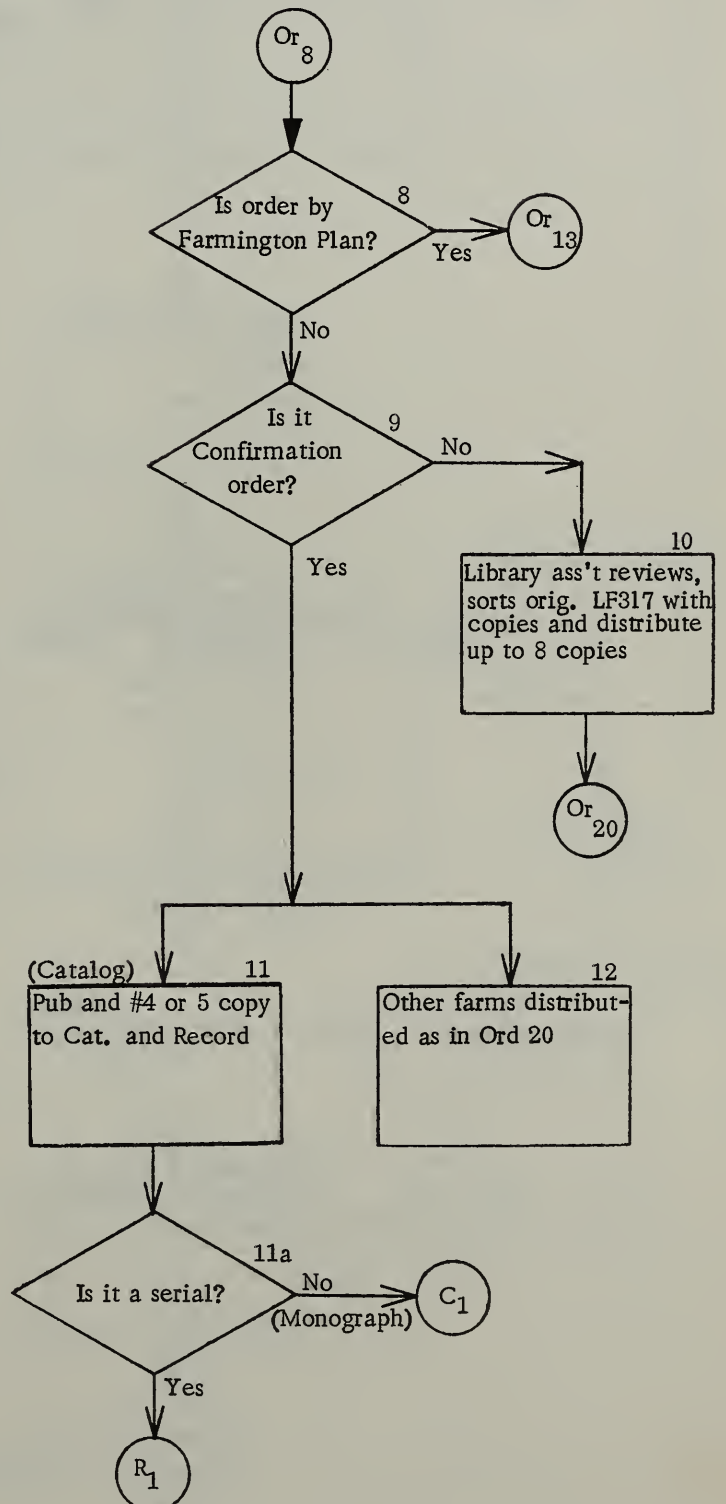
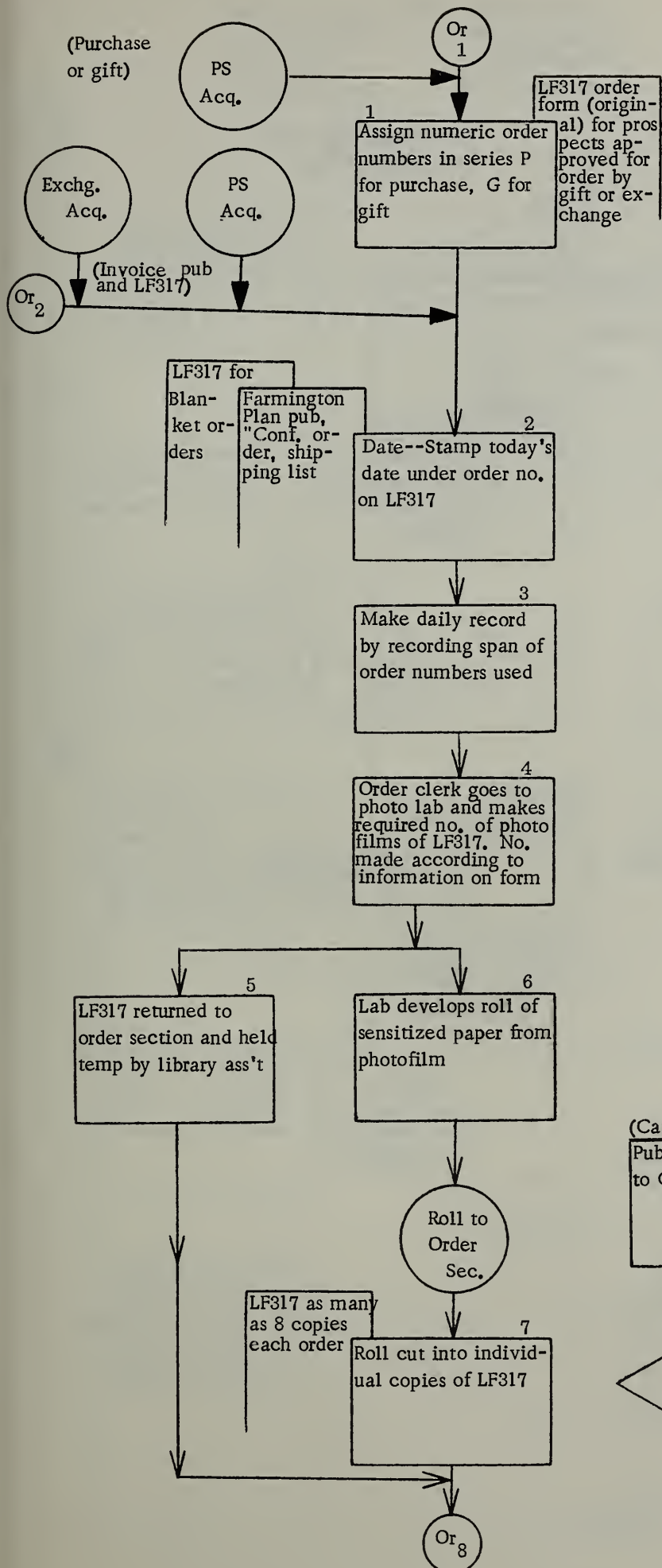
Division of Acquisition

Order Section

Or. Page 1 of 16

Processing Order Forms

(Purchase or gift)



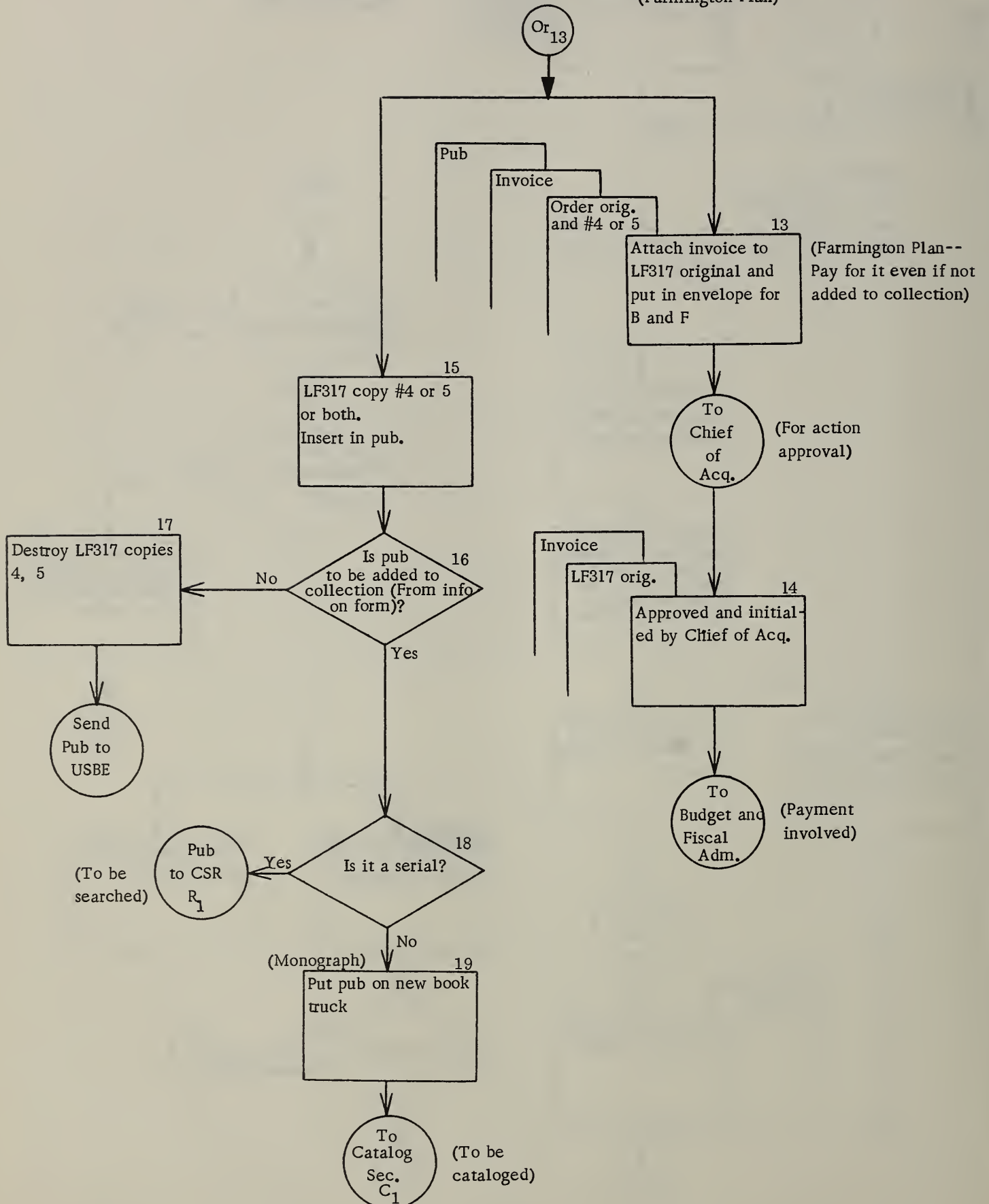
# FLOW PROCESS CHART

## ACQUISITIONS

Order Section

Or. page 2 of 16

Processing Order Forms  
(Farmington Plan)



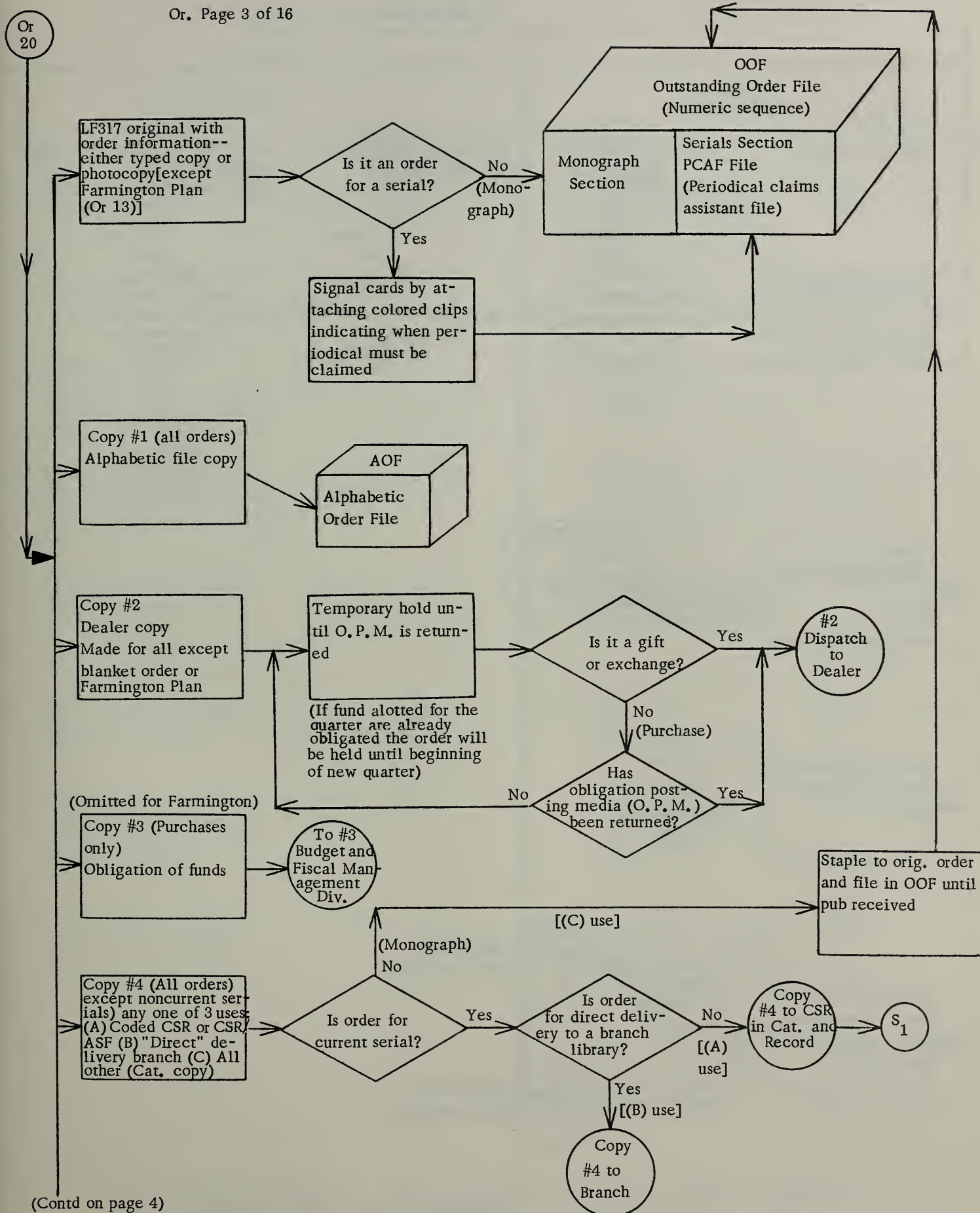


# FLOW PROCESS CHART

## ACQUISITIONS

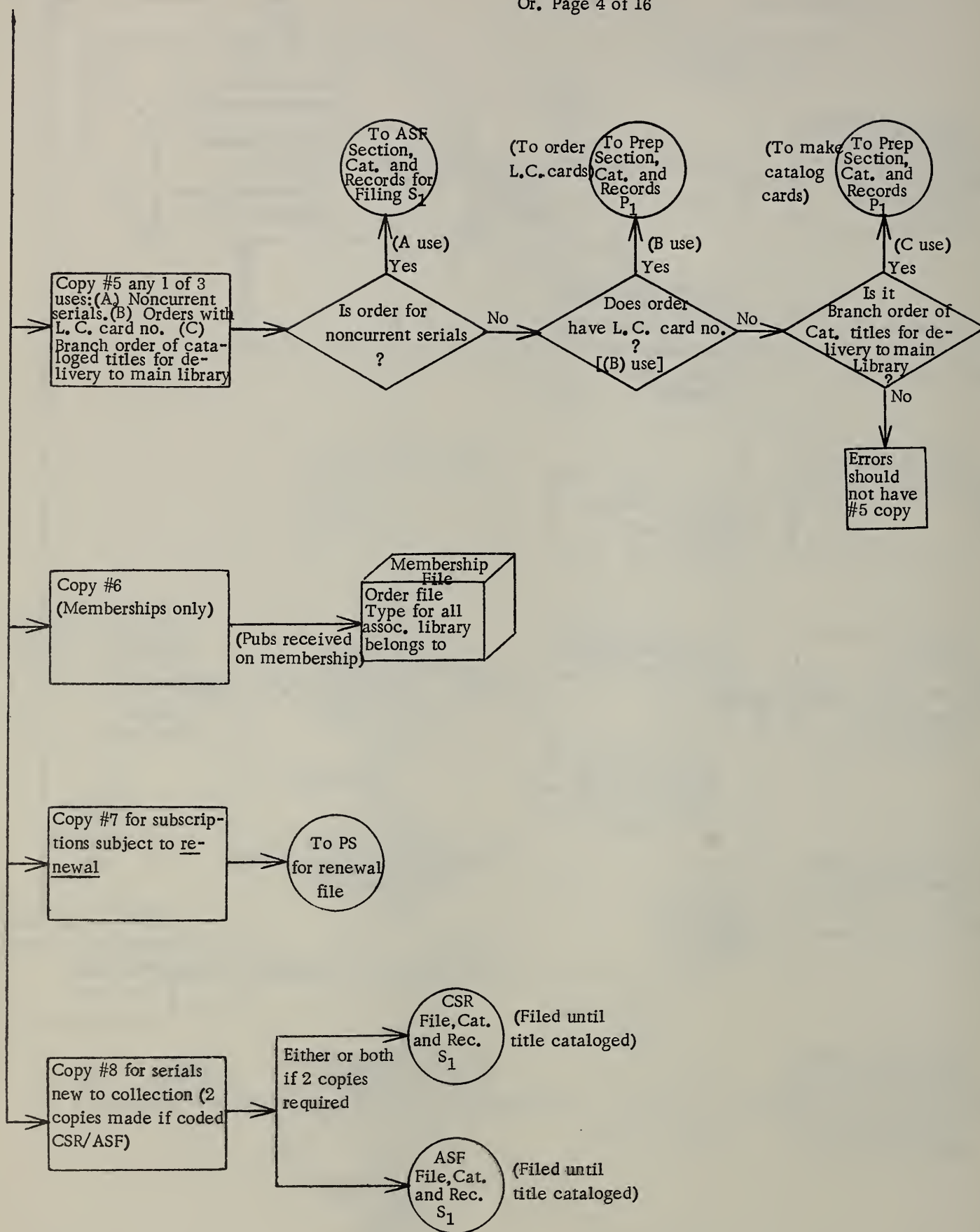
Order Section

Or. Page 3 of 16



(Cont'd  
from page 3)

FLOW PROCESS CHART  
ACQUISITIONS  
Order Section  
Or. Page 4 of 16



See next page for key to forms requirement



## Key to Form Requirements:

Copies numbered on pages 3 and 4

MONOGRAPHS

<u>Type of Order</u>	<u>LF 317 copies required</u>
A. Purchased, no LC card	orig., 1,2,3, 4 (cat.)
B. Purchased LC card	orig., 1,2,3, 4(c), 5(b)
C. Purchased for Branch but delivered to Main Library	Same as b
D. Purchased for Branch and delivered direct to Branch	Orig., 1,2,3, 4(b)
E. Gift or Exchange <u>no</u> LC card	orig., 1,2, 4(c)
F. Gift or Exchange with LC card	orig., 1,2, 4( ), 5b
G. Exchange, <u>no</u> LC card, for Branch but delivery to Main Library	orig., 1,2, 5(c)
H. Exchange, LC card for Branch and delivery direct to Branch	orig., 1,2,4

SERIALS

<u>Type of Order</u>	<u>LF 317 copies required</u>
A. Purchase Renewals(only current issues)	orig., 1,2, 3,4,7
B. Purchase, Membership, Renewals	orig., 1,2,3, 4,6,7
C. Purchase, only noncurrent issues	orig., 1,2,3, 5,7
D. Purchase, order includes both current and non current	orig., 1,2,3, 4,5,7
E. Purchase - Titles new to collection	orig., 1,2, 3, 4(CSR) or 5(ASF) or both 4 & 5, 7,8
F. Gift or Exchange, only current issues	orig., 1,2, 4,
G. Gift or Exchange, only non current issues	orig., 1,2, 5
H. Gift or Exchange, order includes both current and non current	orig., 1,2, 4,5
I. Gift or Exchange, for title new to collection	orig., 1,2, 4(CSR) or 5(ASF) or both 4 & 5,8

Note:

Farmington Plan )  
                           ) may qualify in any of above classes  
                           ) of Monographs or Serials  
 Blanket Orders )

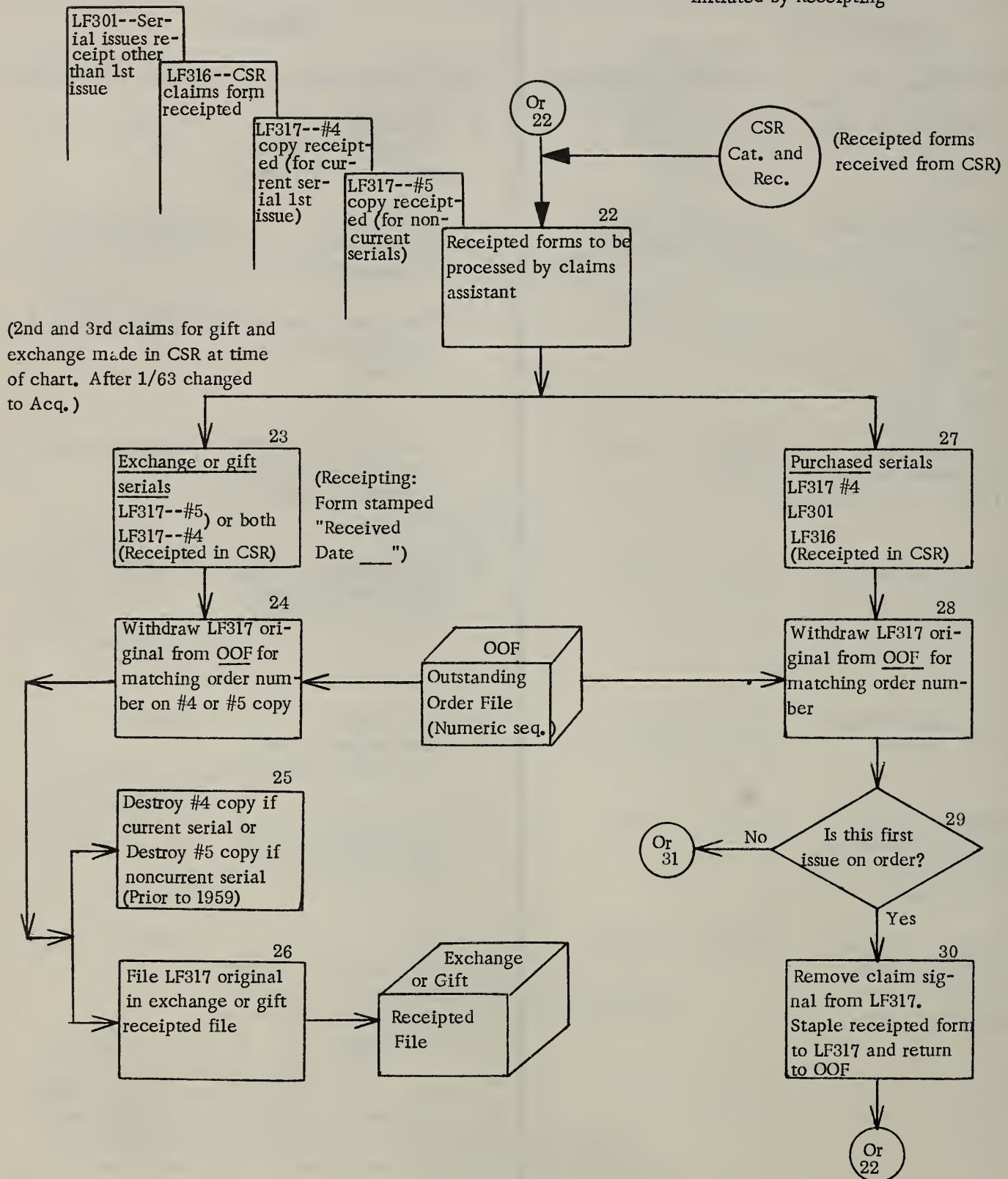
# FLOW PROCESS CHART

## ACQUISITIONS

Order Section

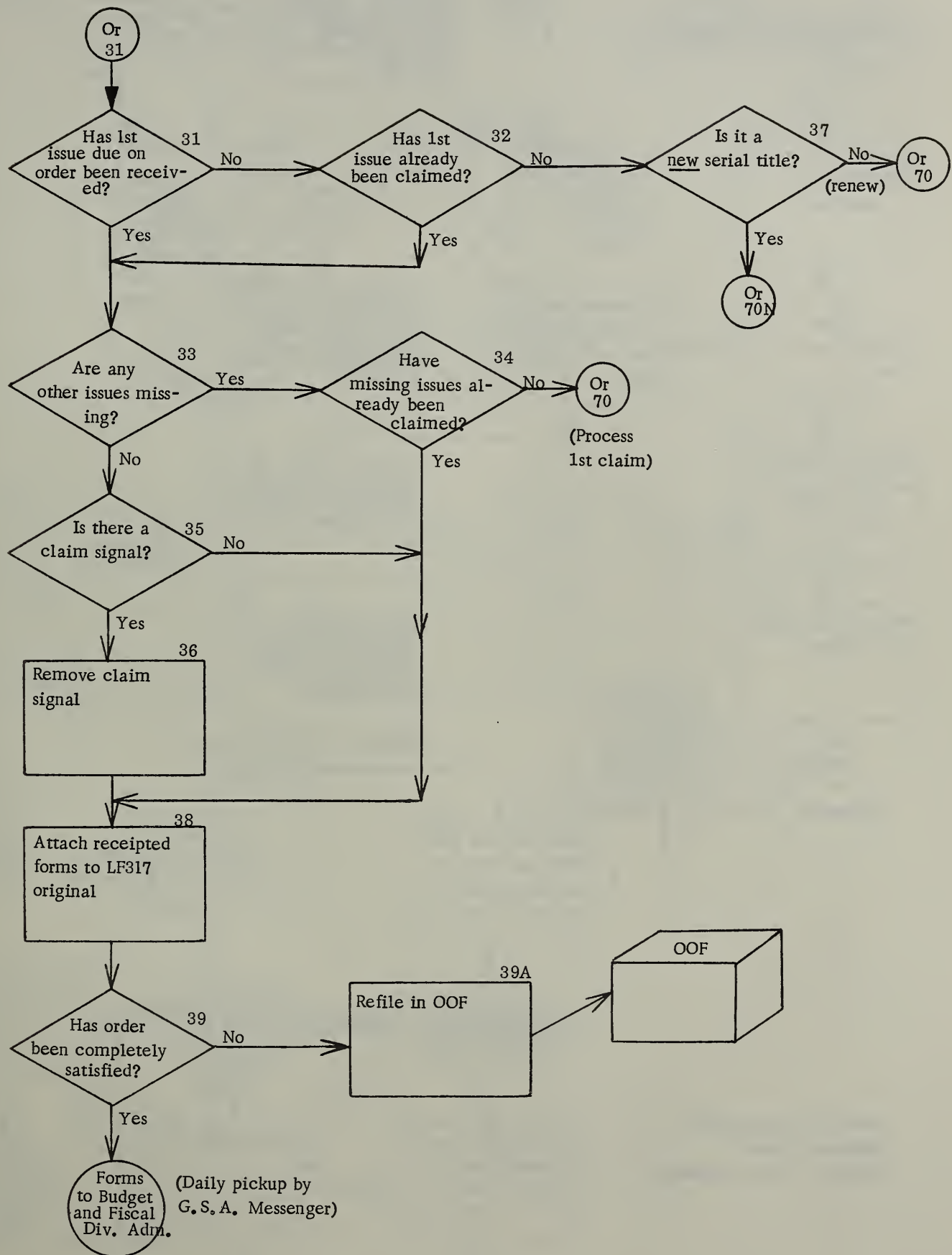
Or. Page 6 of 16

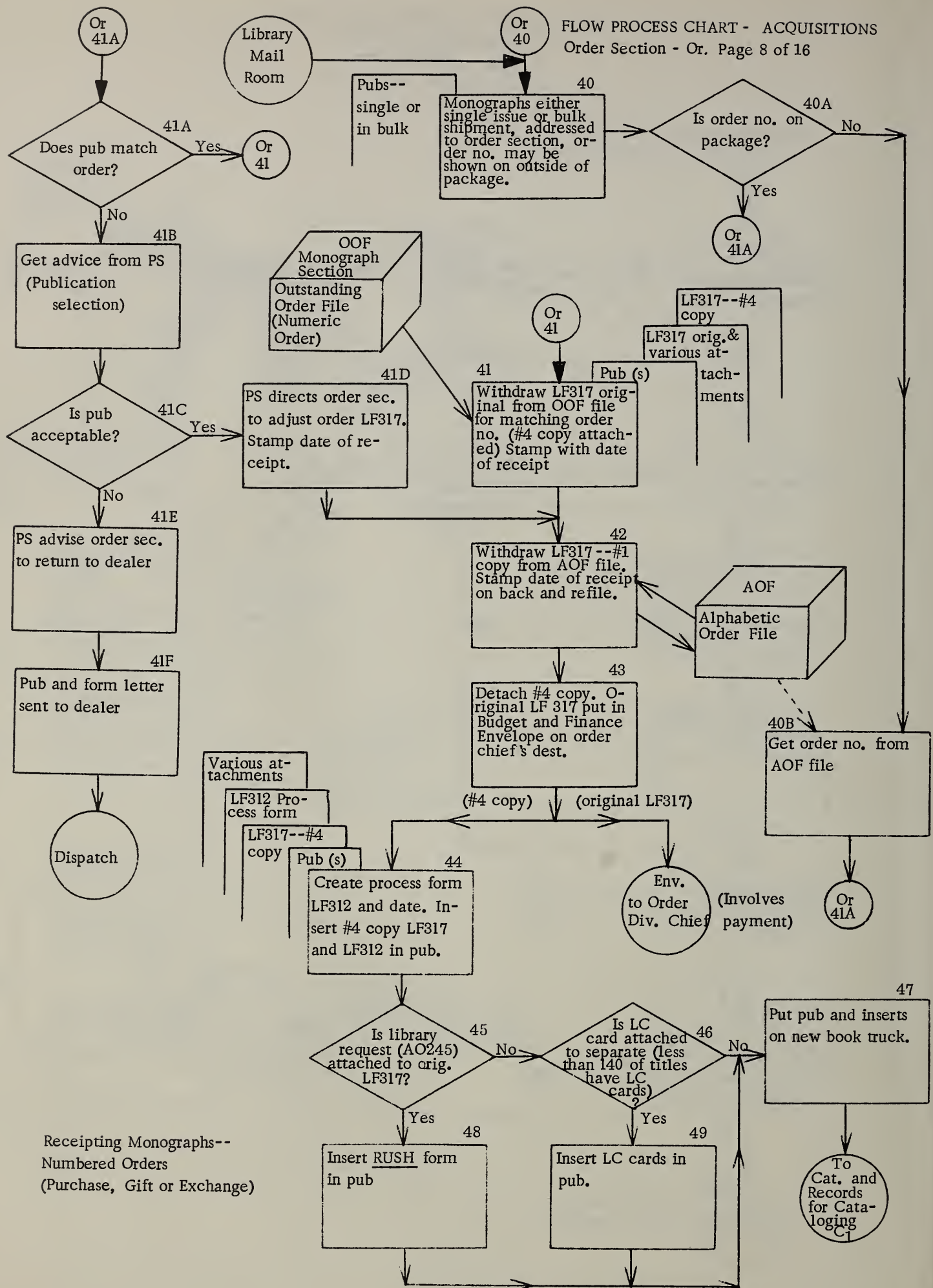
Receipting Serials and Claiming  
Initiated by Receipting





FLOW PROCESS CHART  
ACQUISITIONS  
Order Section  
Or. Page 7 of 16







FLOW PROCESS CHART

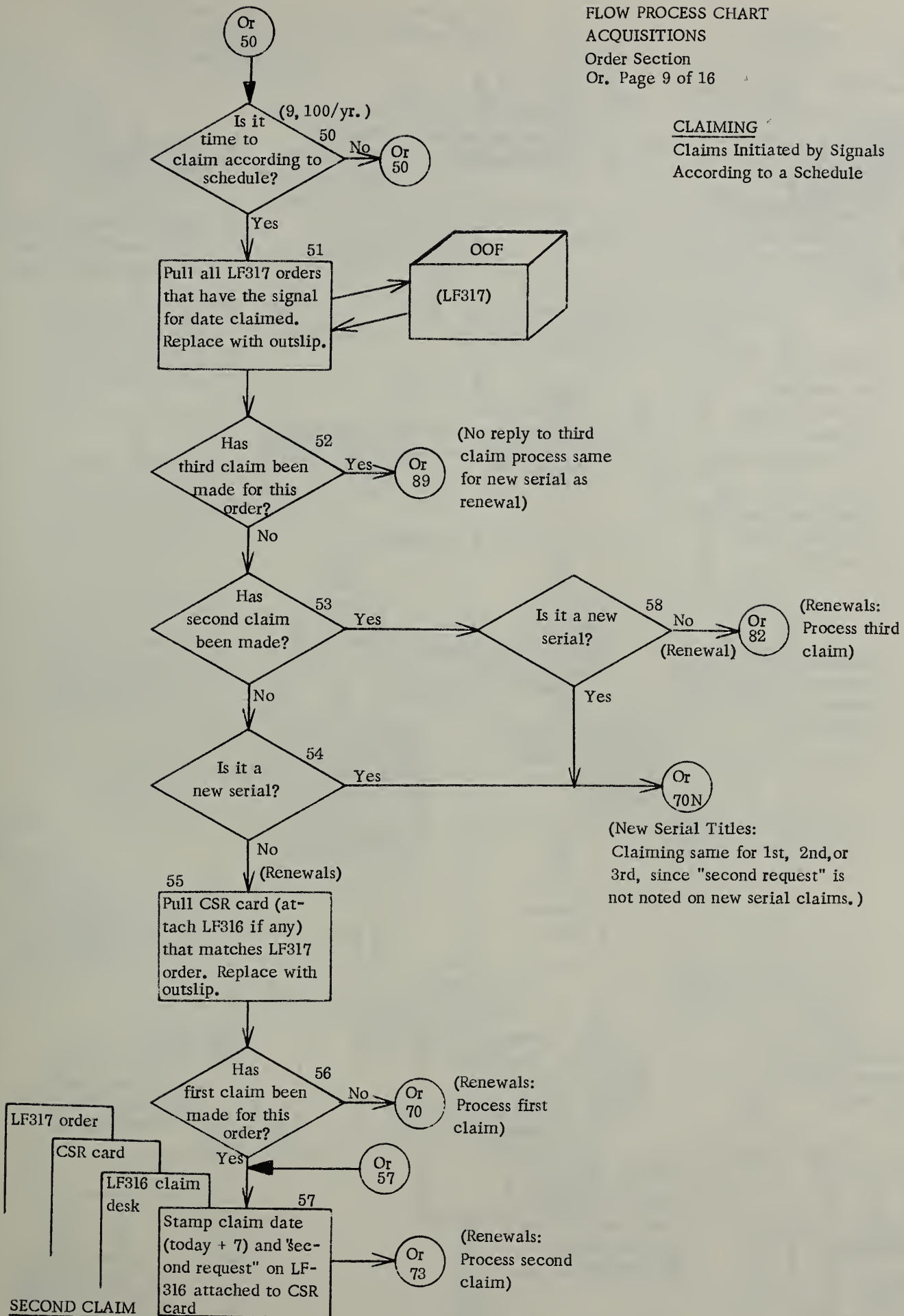
ACQUISITIONS

Order Section

Or. Page 9 of 16

CLAIMING

Claims Initiated by Signals  
According to a Schedule

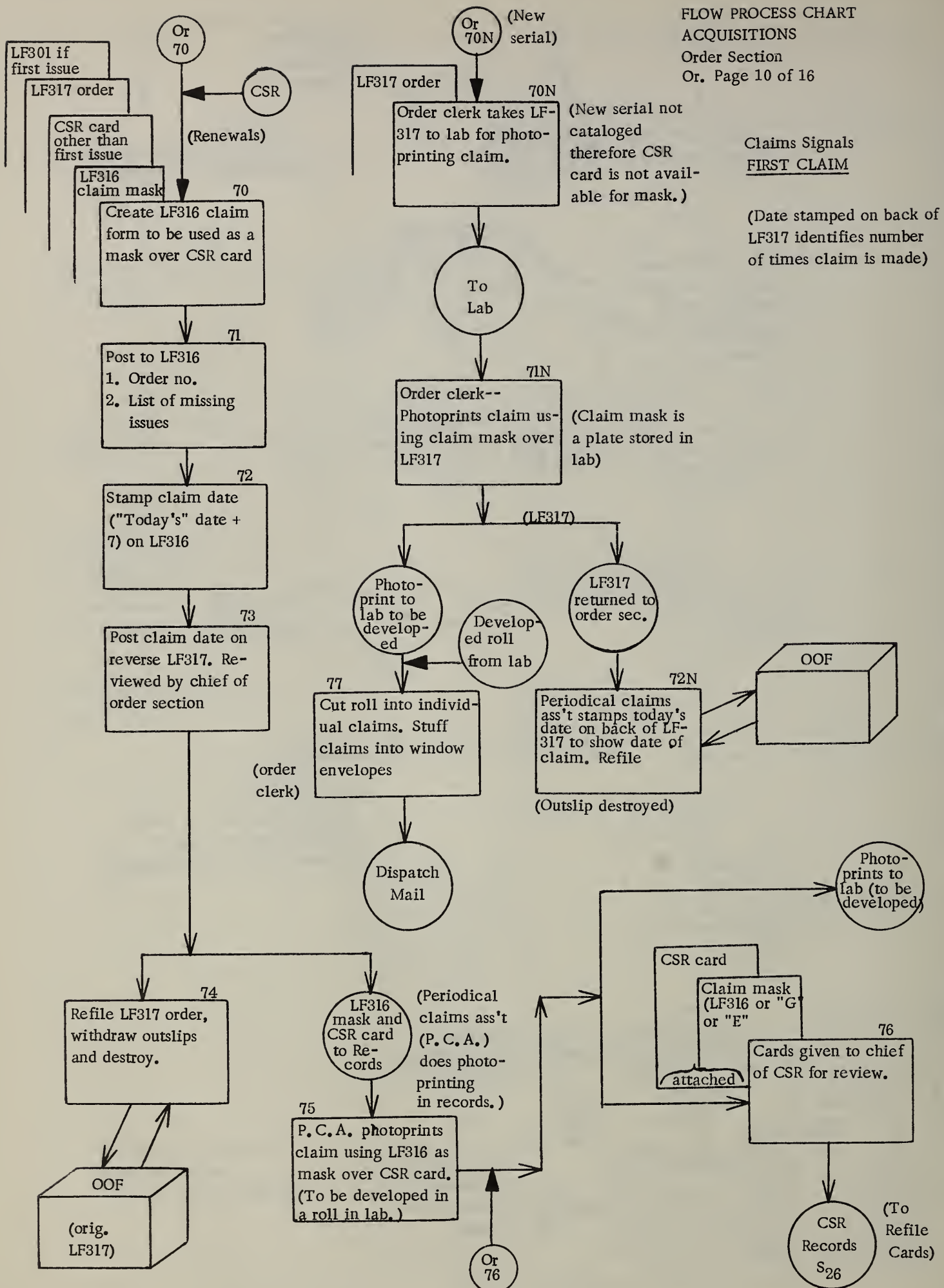


Order Section  
Or. Page 10 of 16

## Claims Signals

### FIRST CLAIM

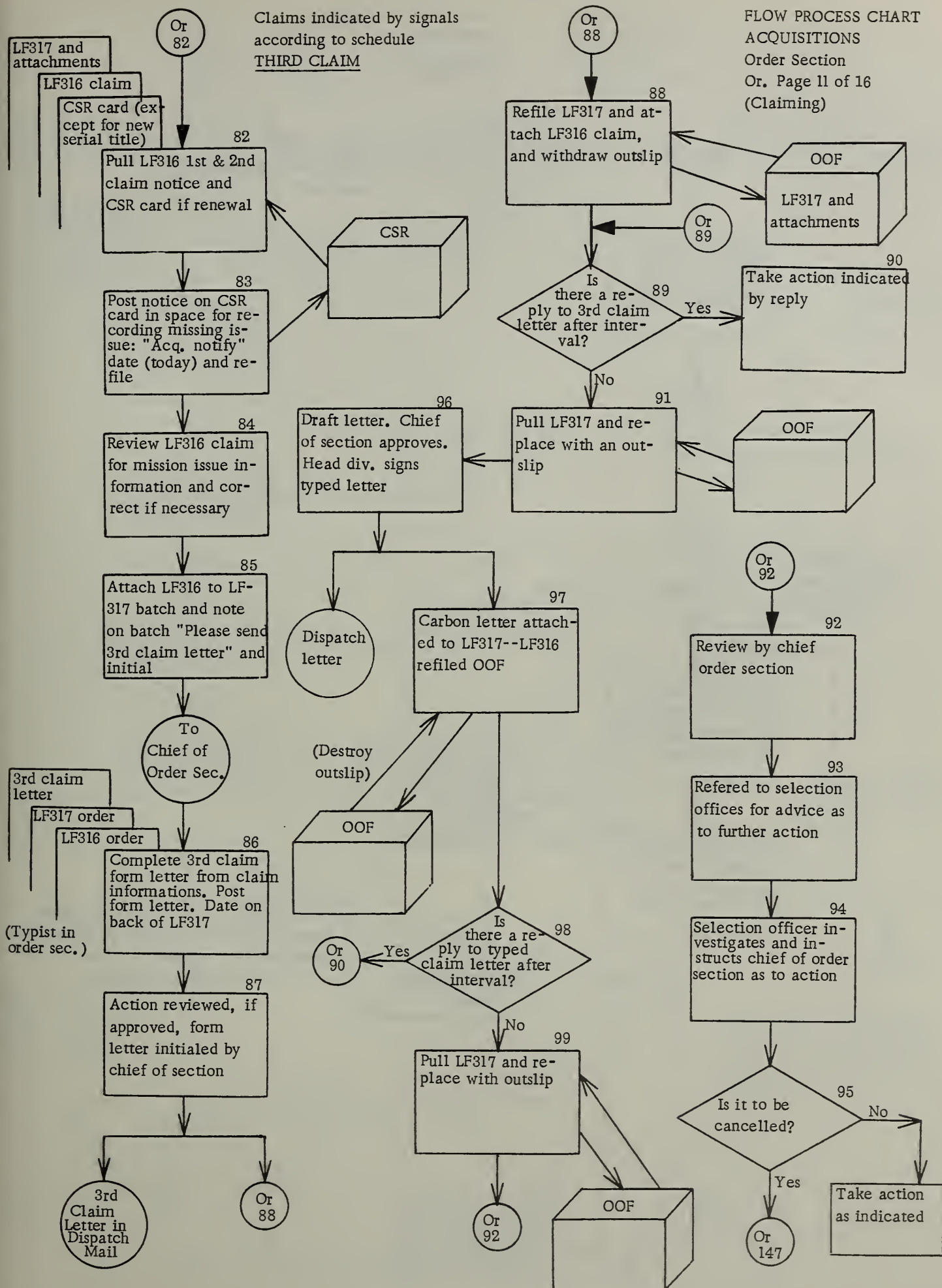
(Date stamped on back of  
LF317 identifies number  
of times claim is made)





Claims indicated by signals  
according to schedule  
THIRD CLAIM

FLOW PROCESS CHART  
ACQUISITIONS  
Order Section  
Or. Page 11 of 16  
(Claiming)



# FLOW PROCESS CHART

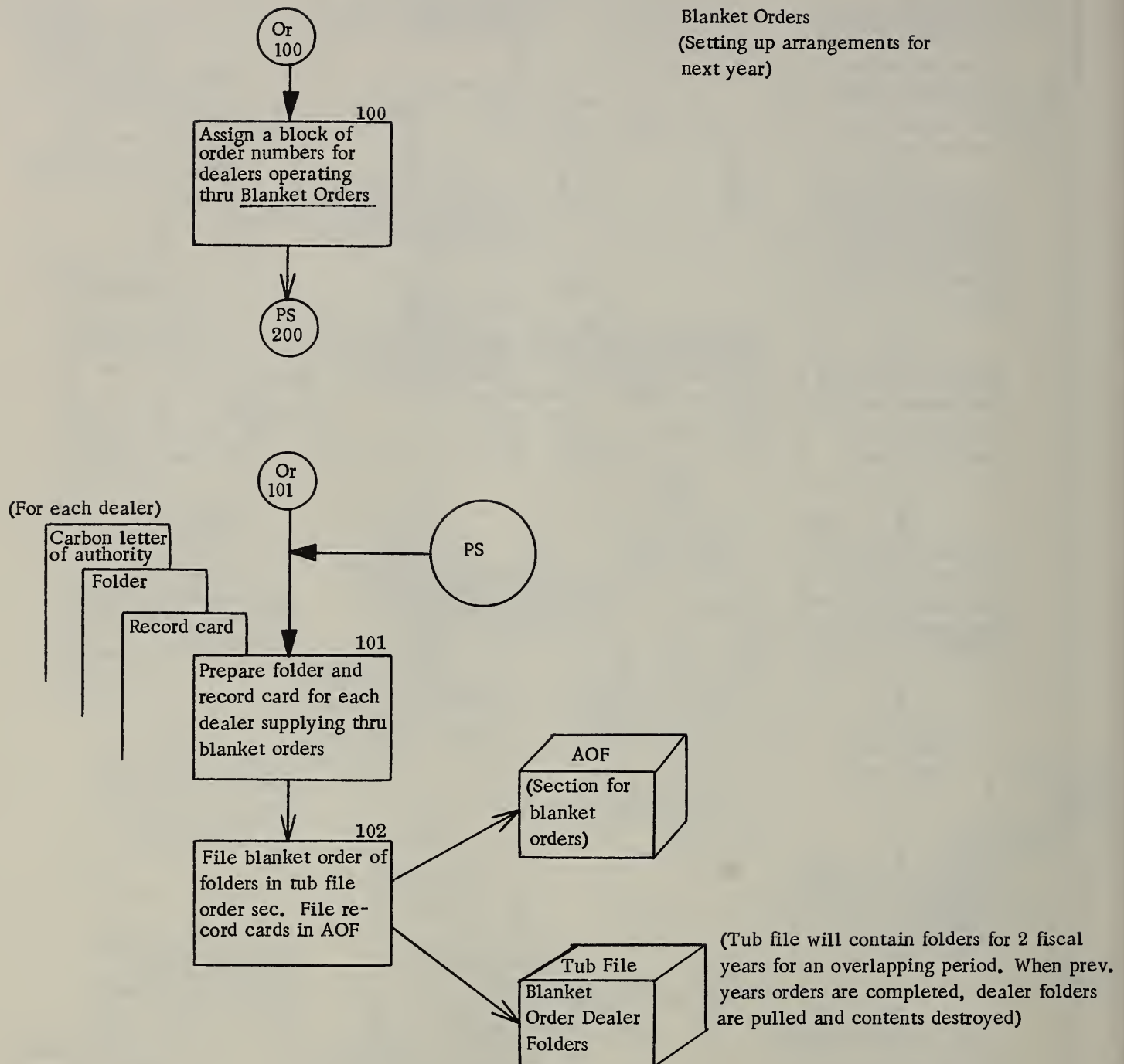
## ACQUISITIONS

Order Section

Or. Page 12 of 16

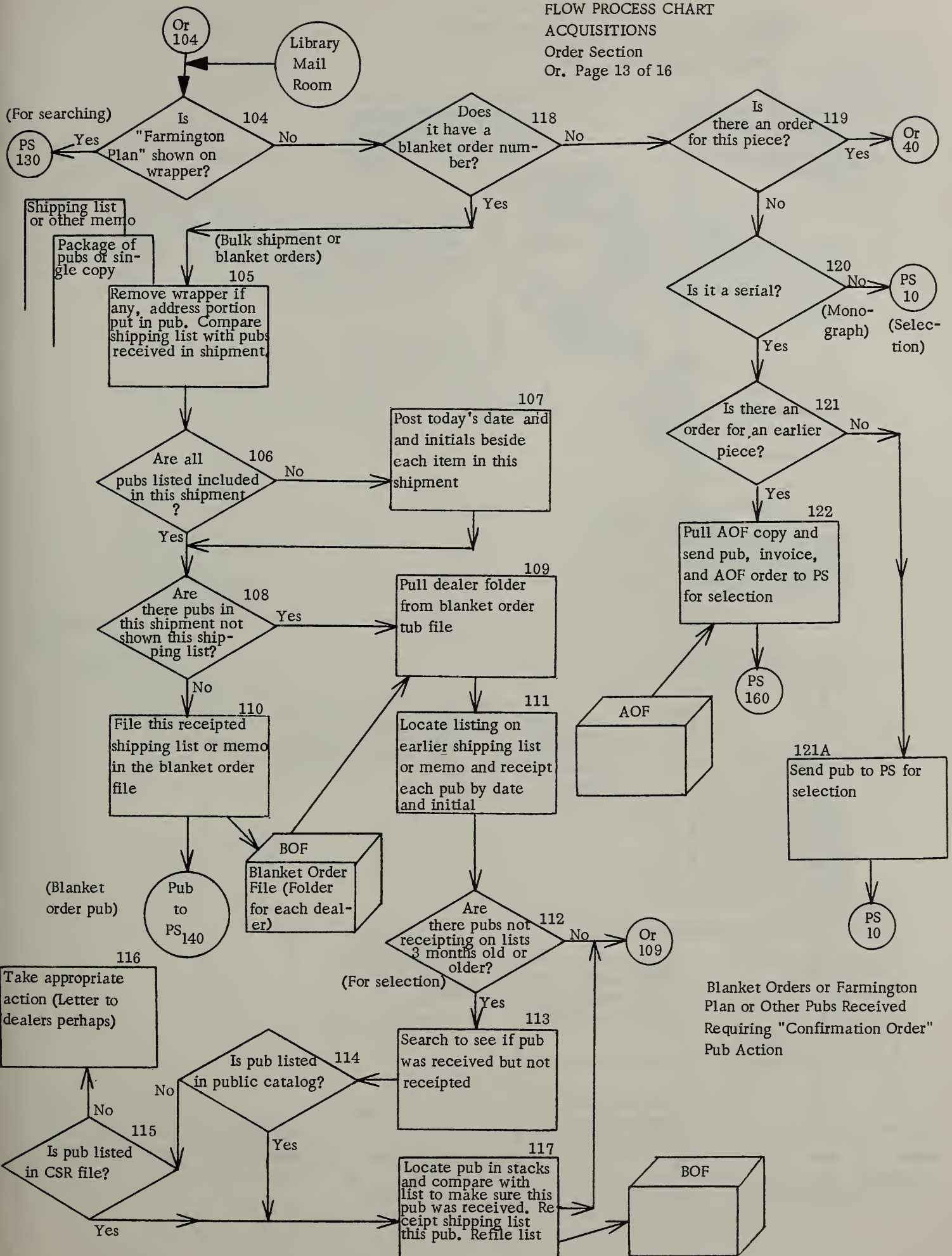
### Blanket Orders

(Setting up arrangements for next year)

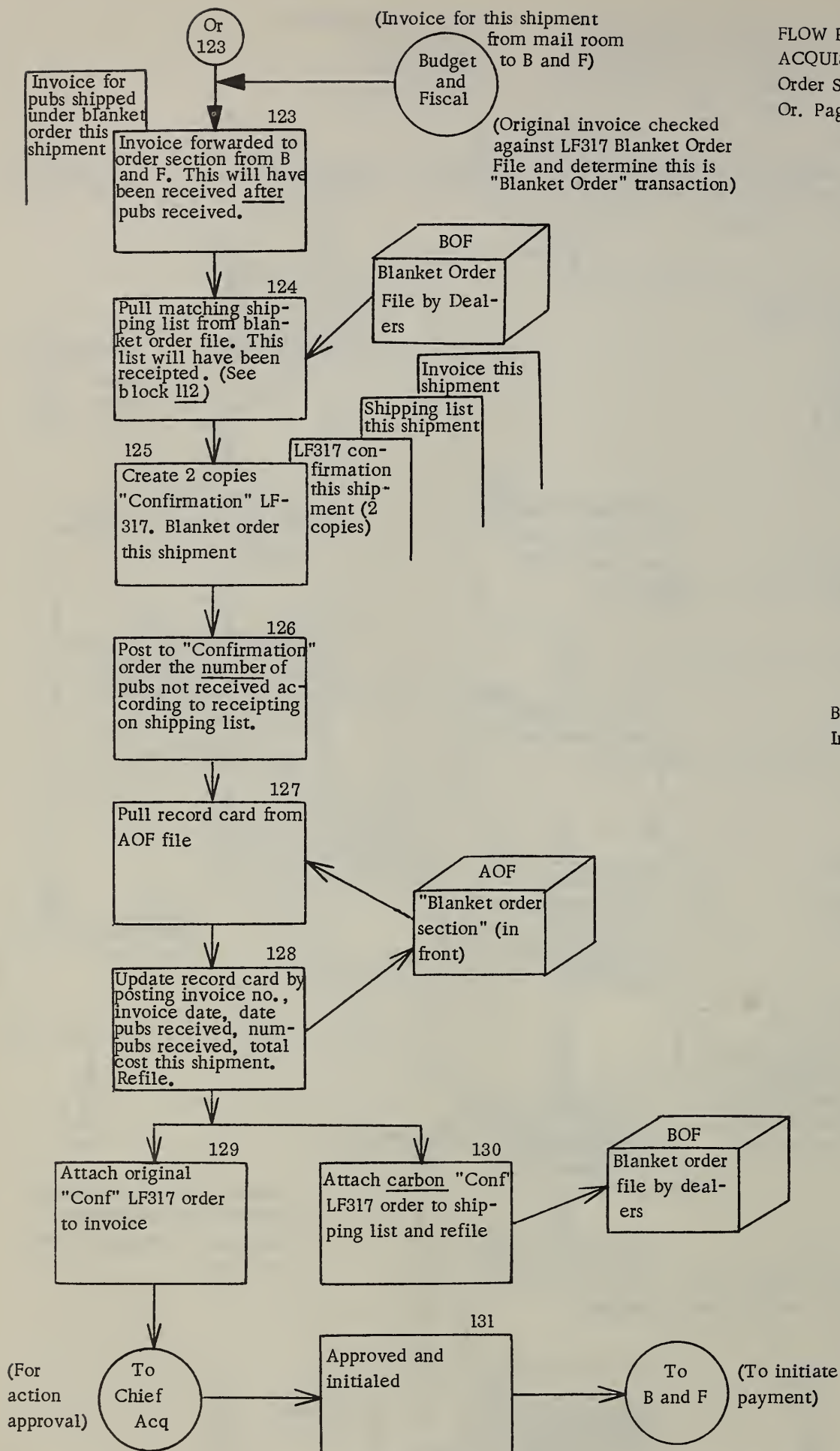




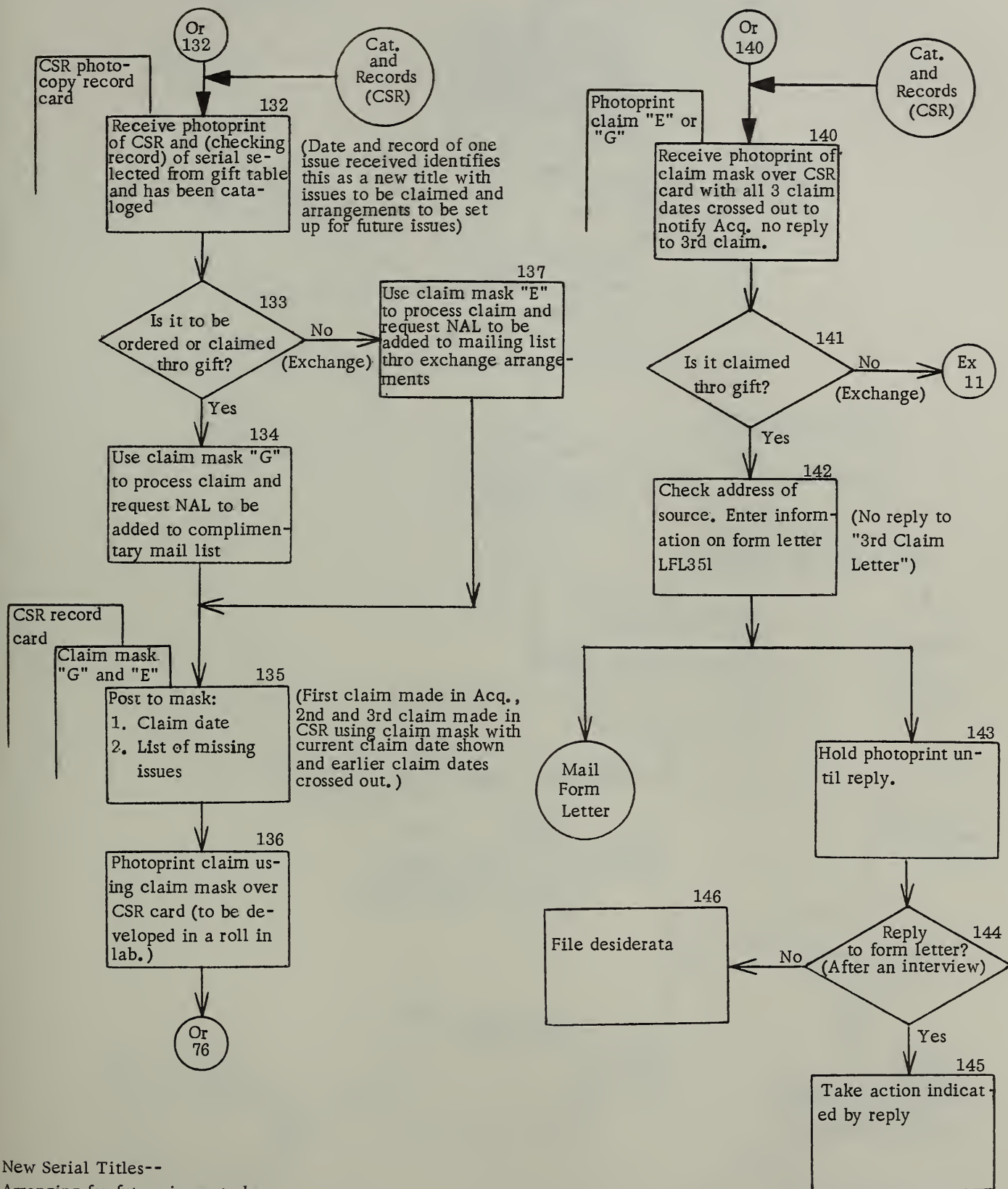
FLOW PROCESS CHART  
ACQUISITIONS  
Order Section  
Or. Page 13 of 16



FLOW PROCESS CHART  
ACQUISITIONS  
Order Section  
Or. Page 14 of 16





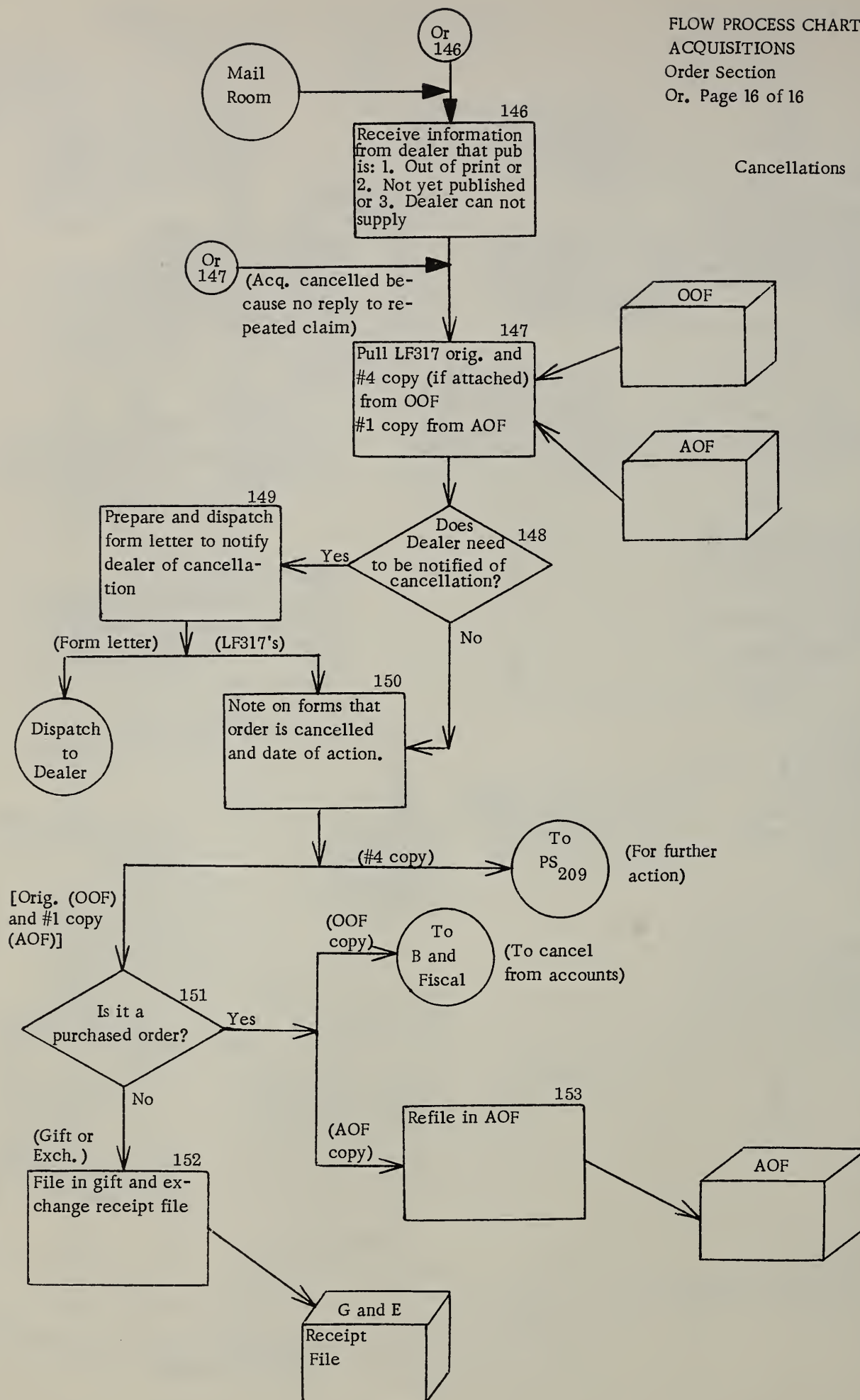


New Serial Titles--  
Arranging for future issues to be  
thro gift or exchange and claiming  
missing issues

No Reply to "Third Claim Letters" for  
Gift and Exchange

FLOW PROCESS CHART  
ACQUISITIONS  
Order Section  
Or. Page 16 of 16

Cancellations





T E C H N I C A L   S E R V I C E S

DIVISION OF ACQUISITIONS

Publication Selection Section

Flow Process Charts

13 pages

Blocks coded Ps 1 - Ps 210

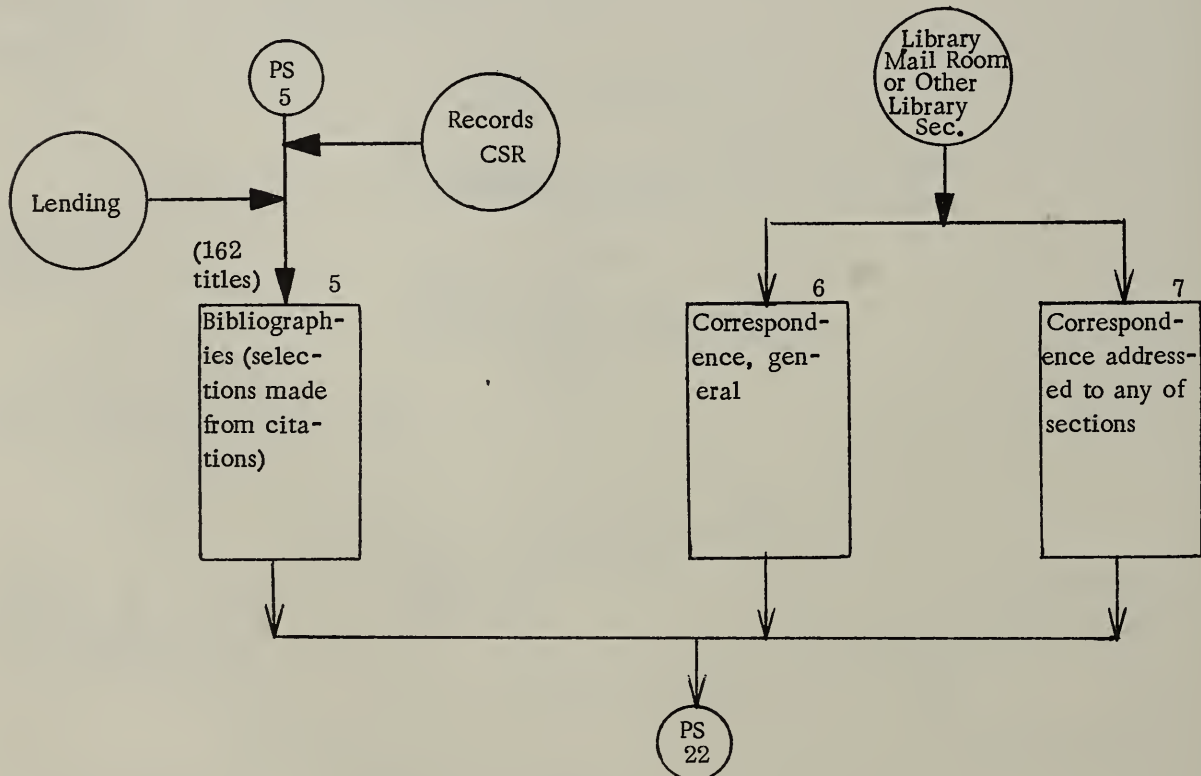
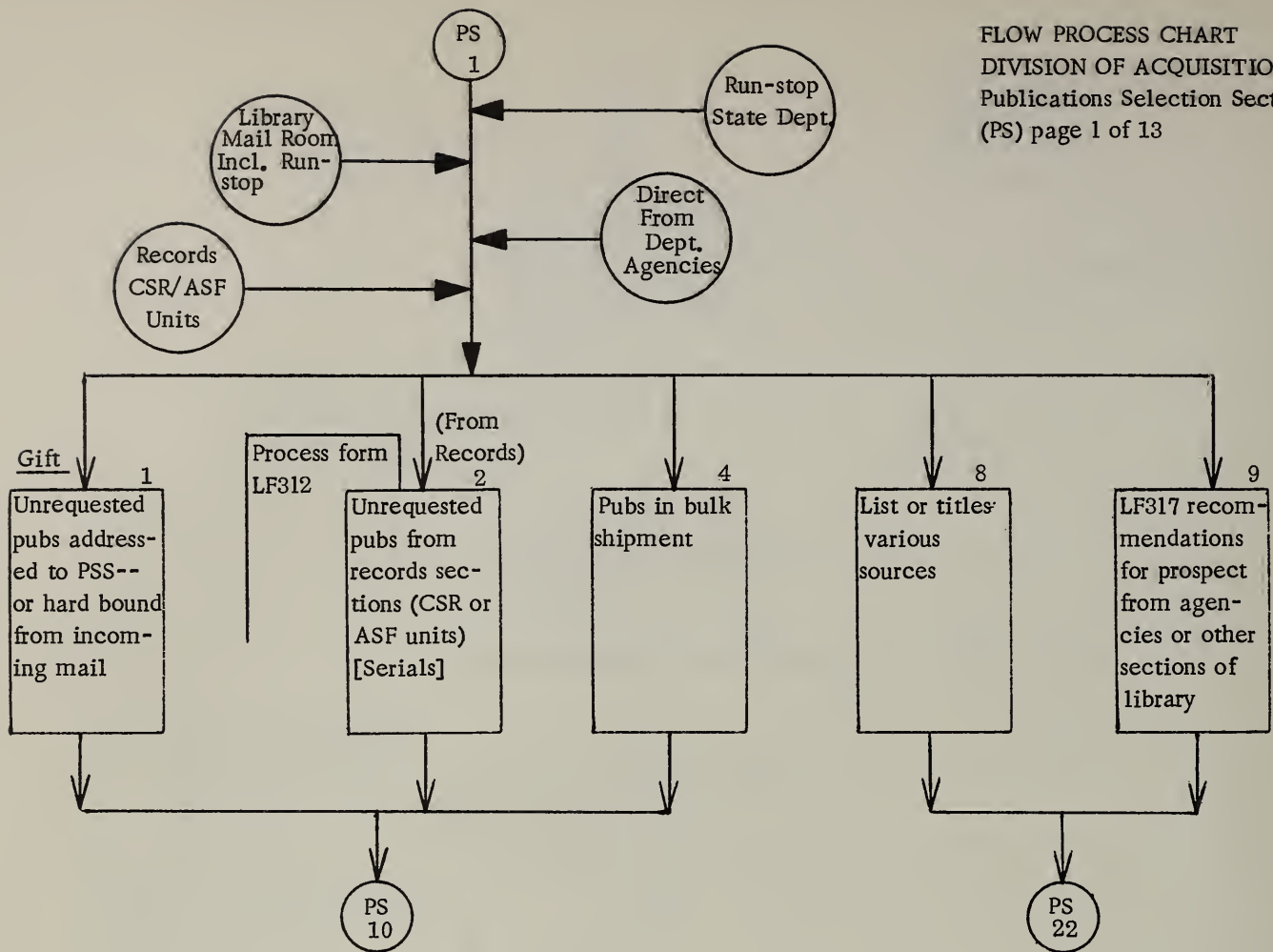
-

Exchange Section

Flow Process Chart

1 page

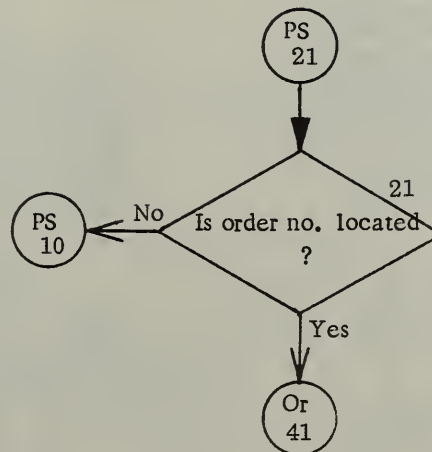
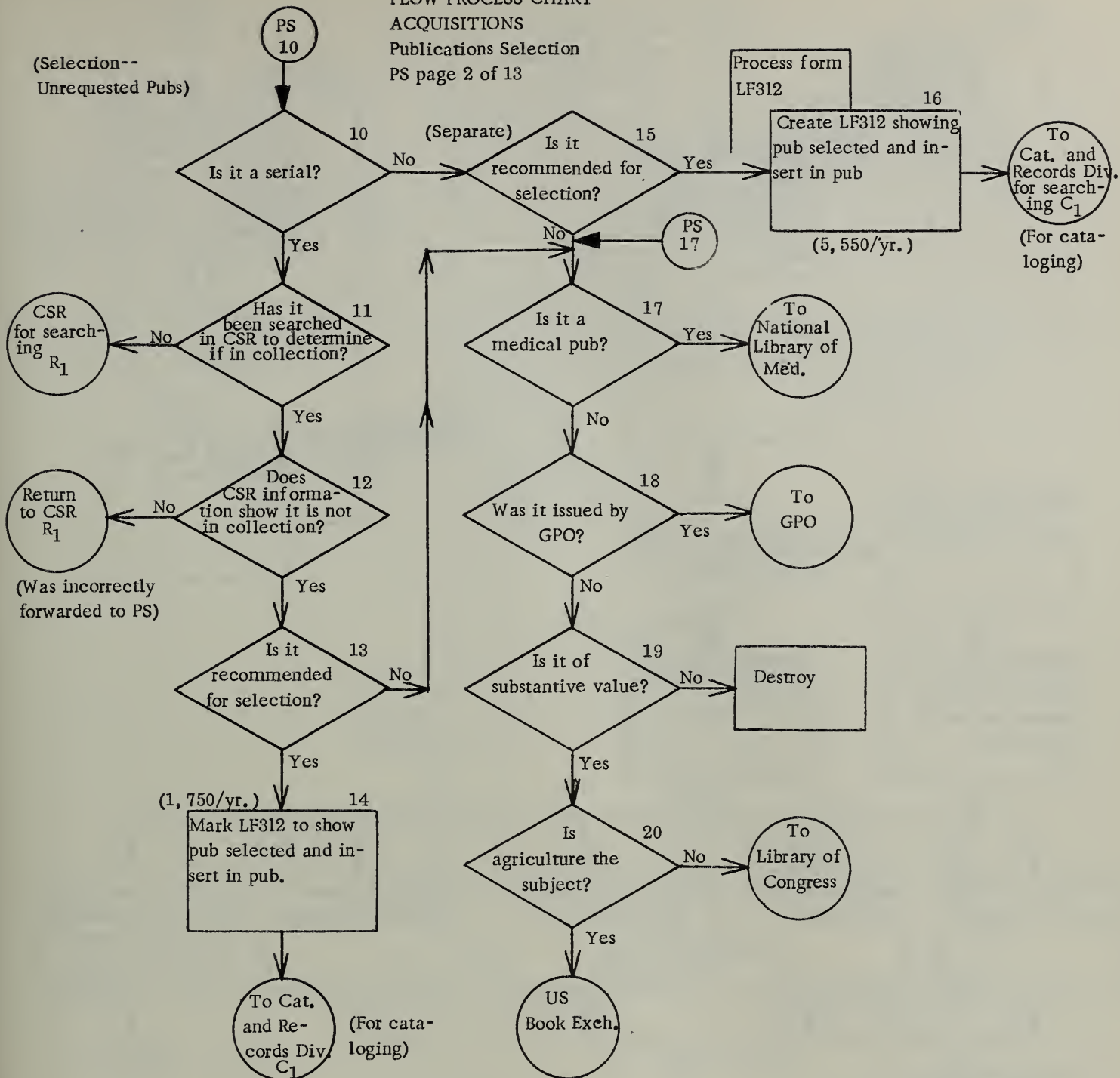
Blocks coded Ex 1 - Ex 16



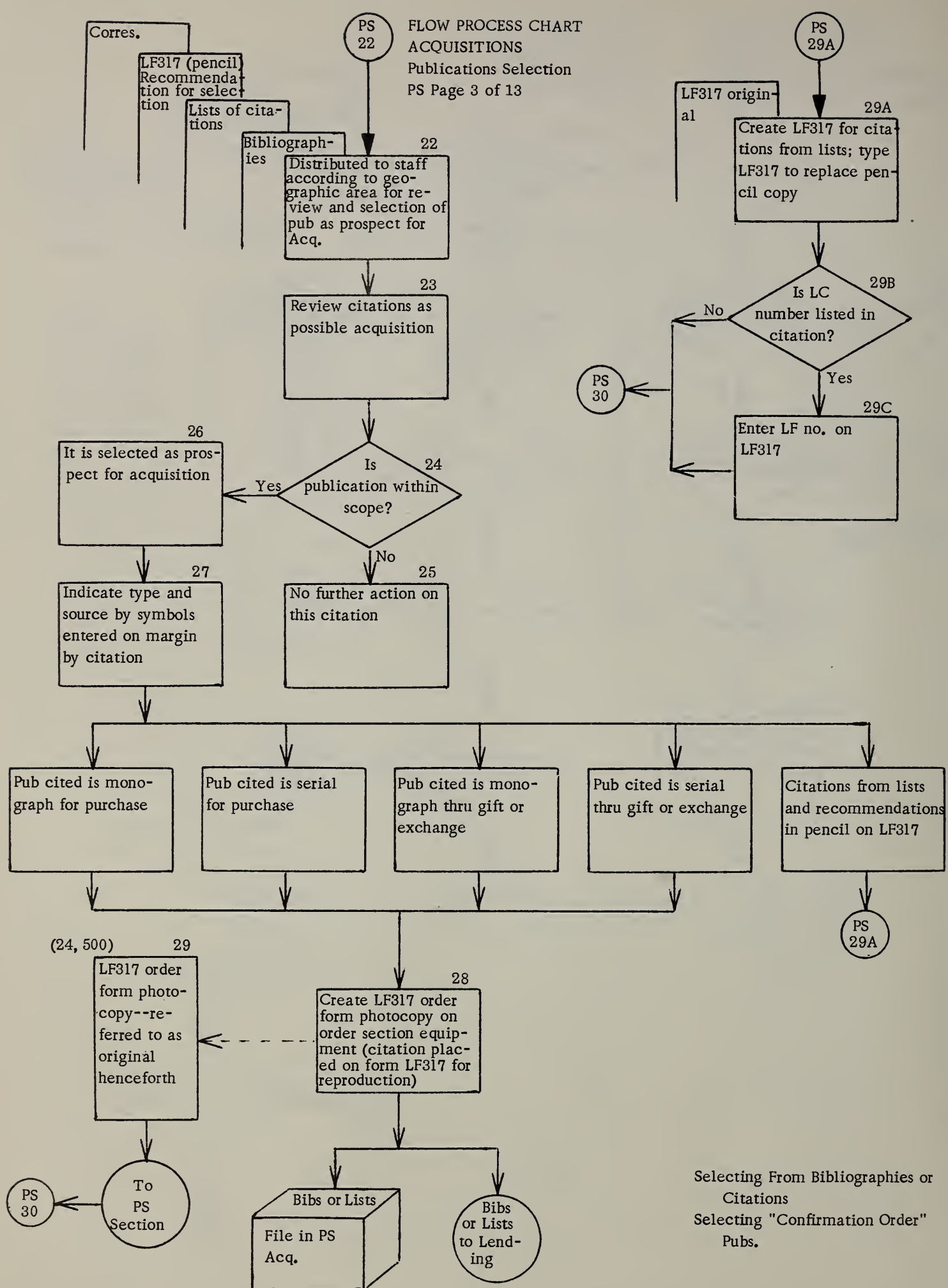


FLOW PROCESS CHART  
ACQUISITIONS  
Publications Selection  
PS page 2 of 13

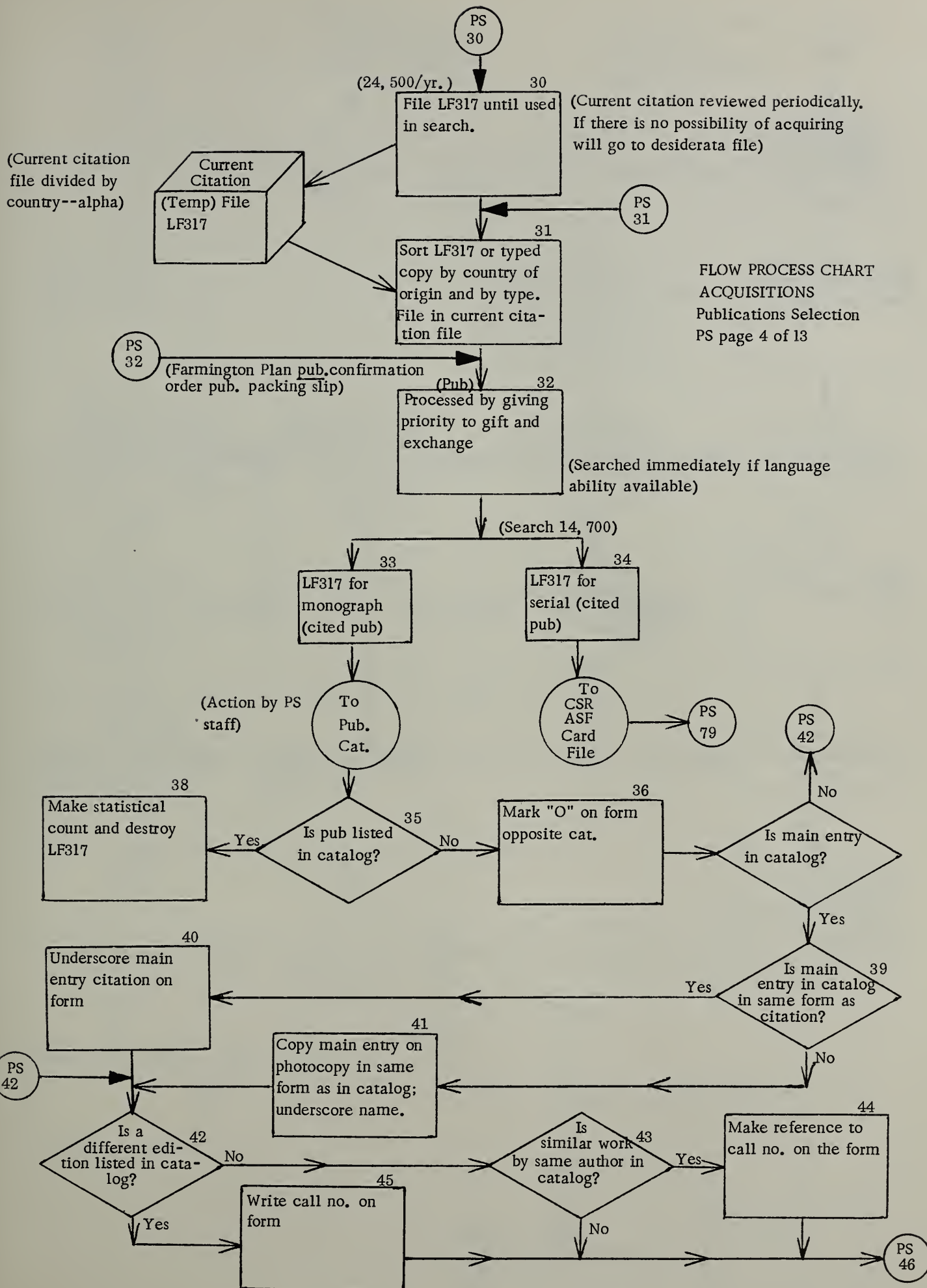
(Selection--  
Unrequested Pubs)

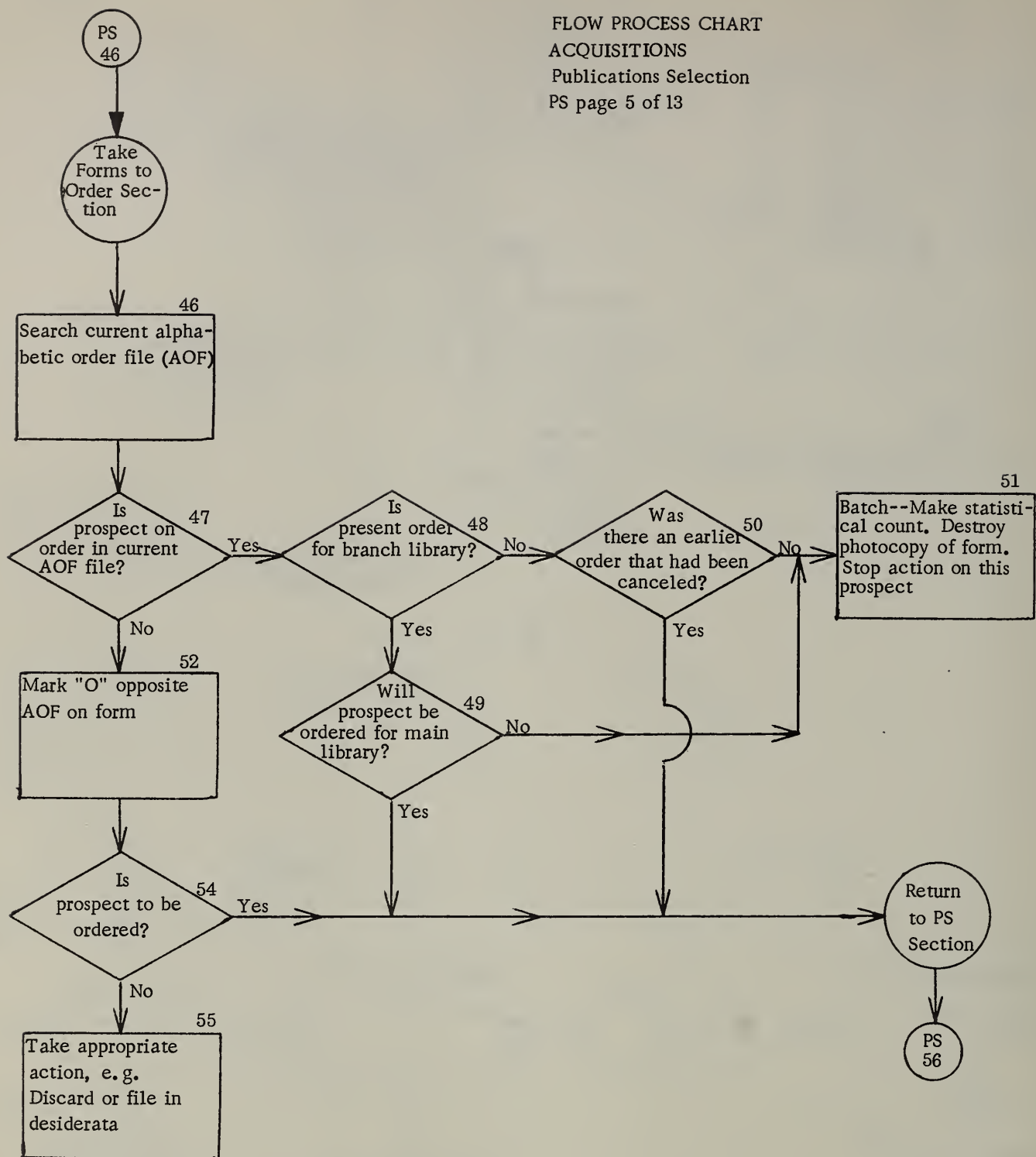


FLOW PROCESS CHART  
ACQUISITIONS  
Publications Selection  
PS Page 3 of 13

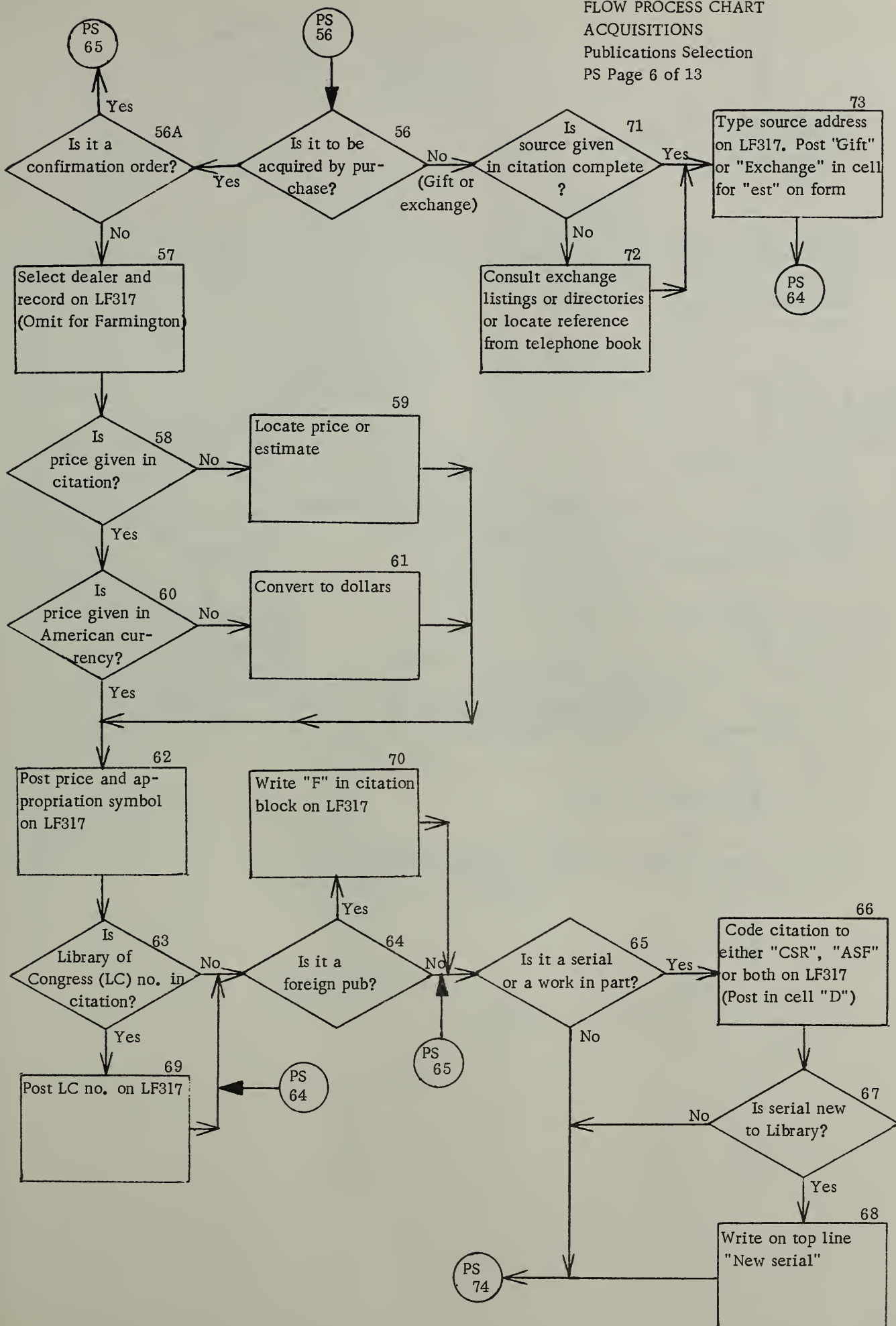


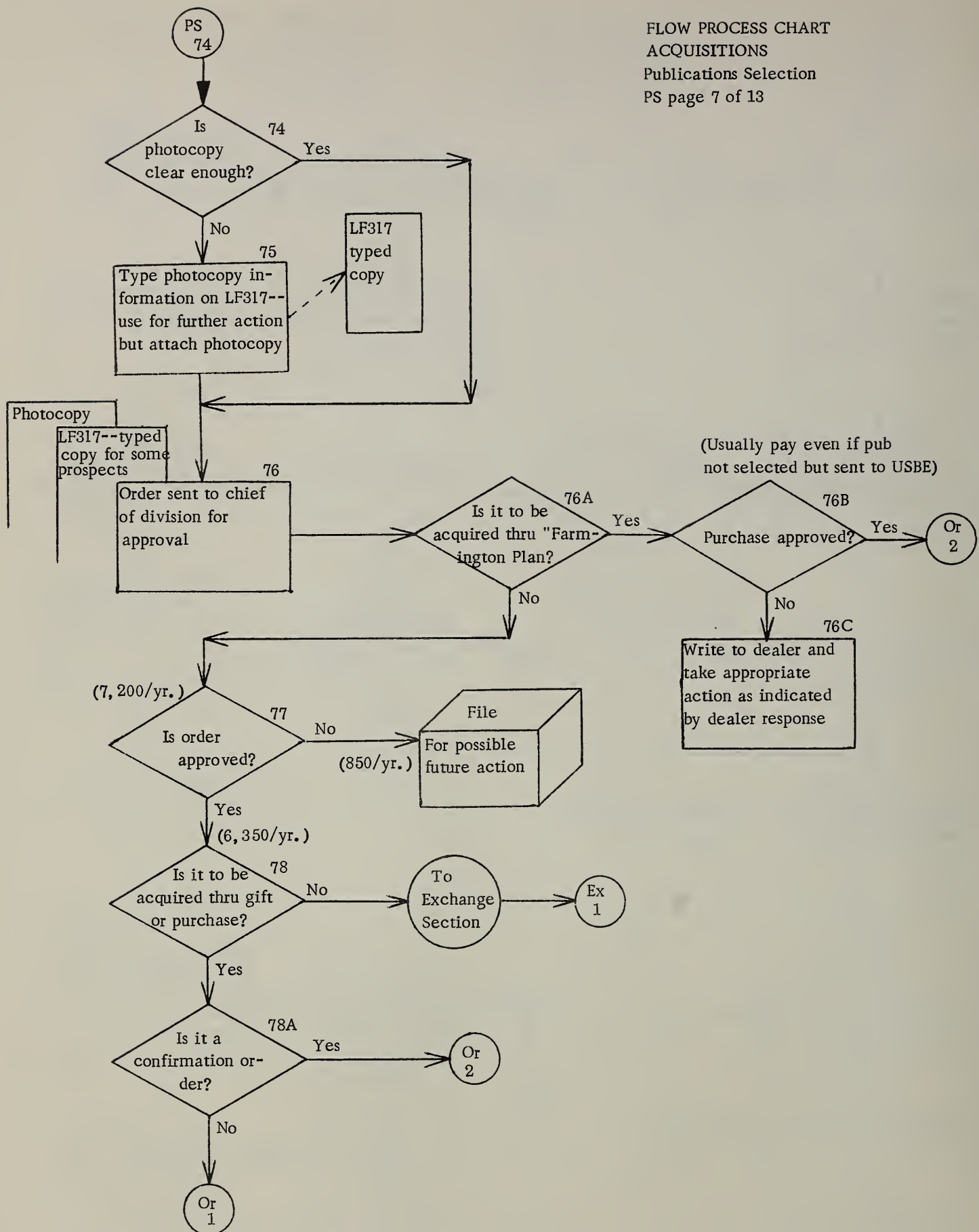






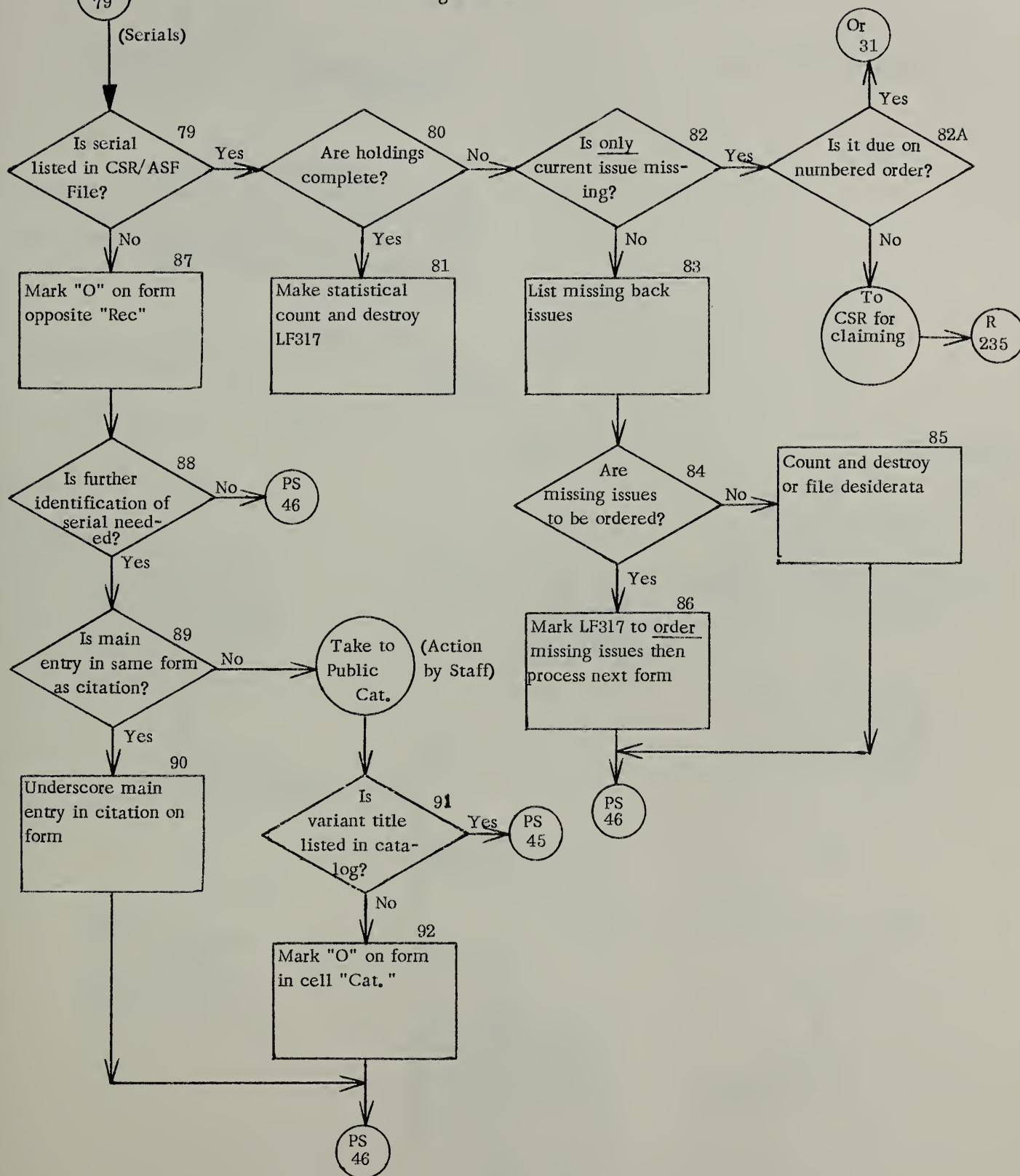








FLOW PROCESS CHART  
ACQUISITIONS  
Publications Selection  
PS Page 8 of 13

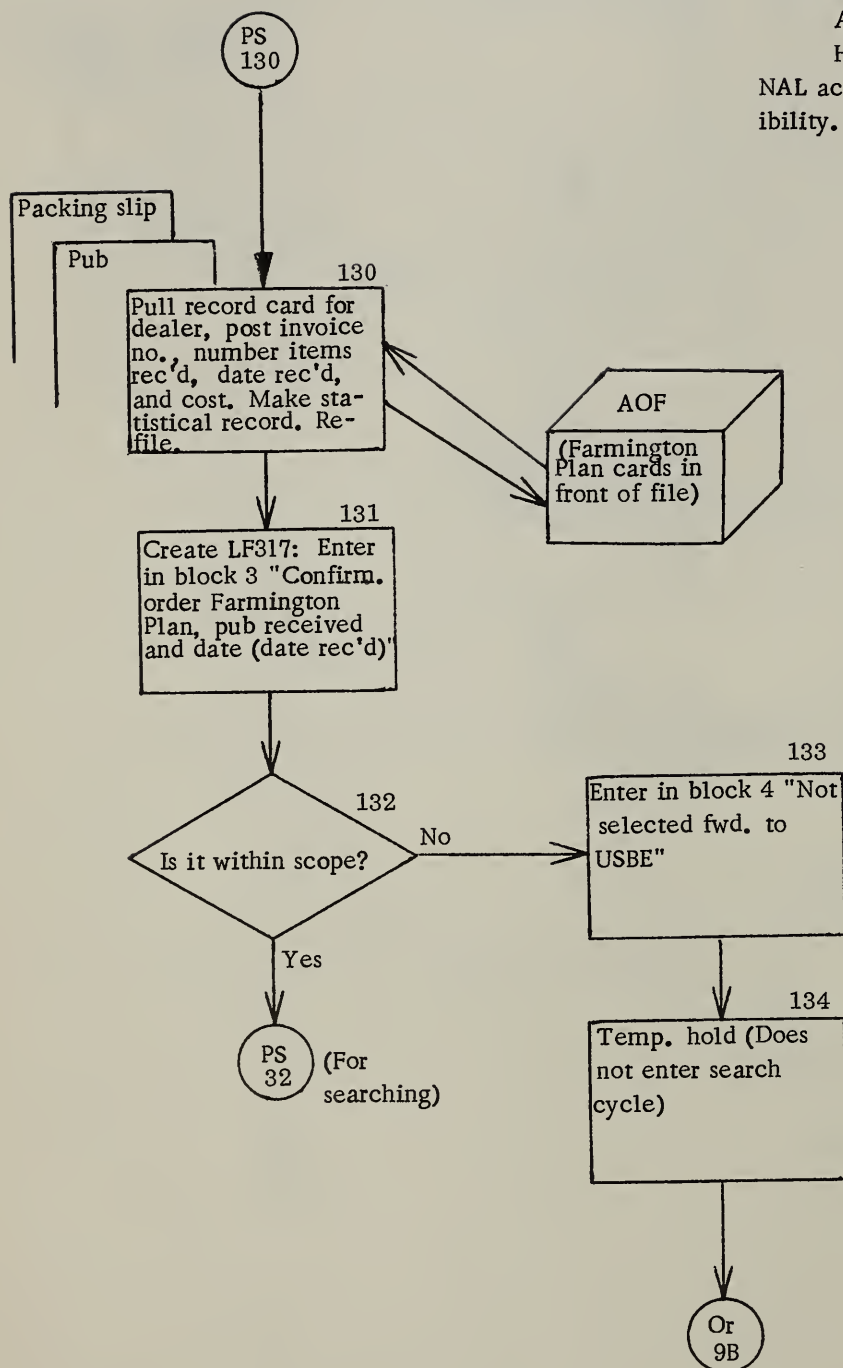


FLOW PROCESS CHART  
ACQUISITIONS  
Publications Selection  
PS page 9 of 13

Farmington Plan  
Receipting

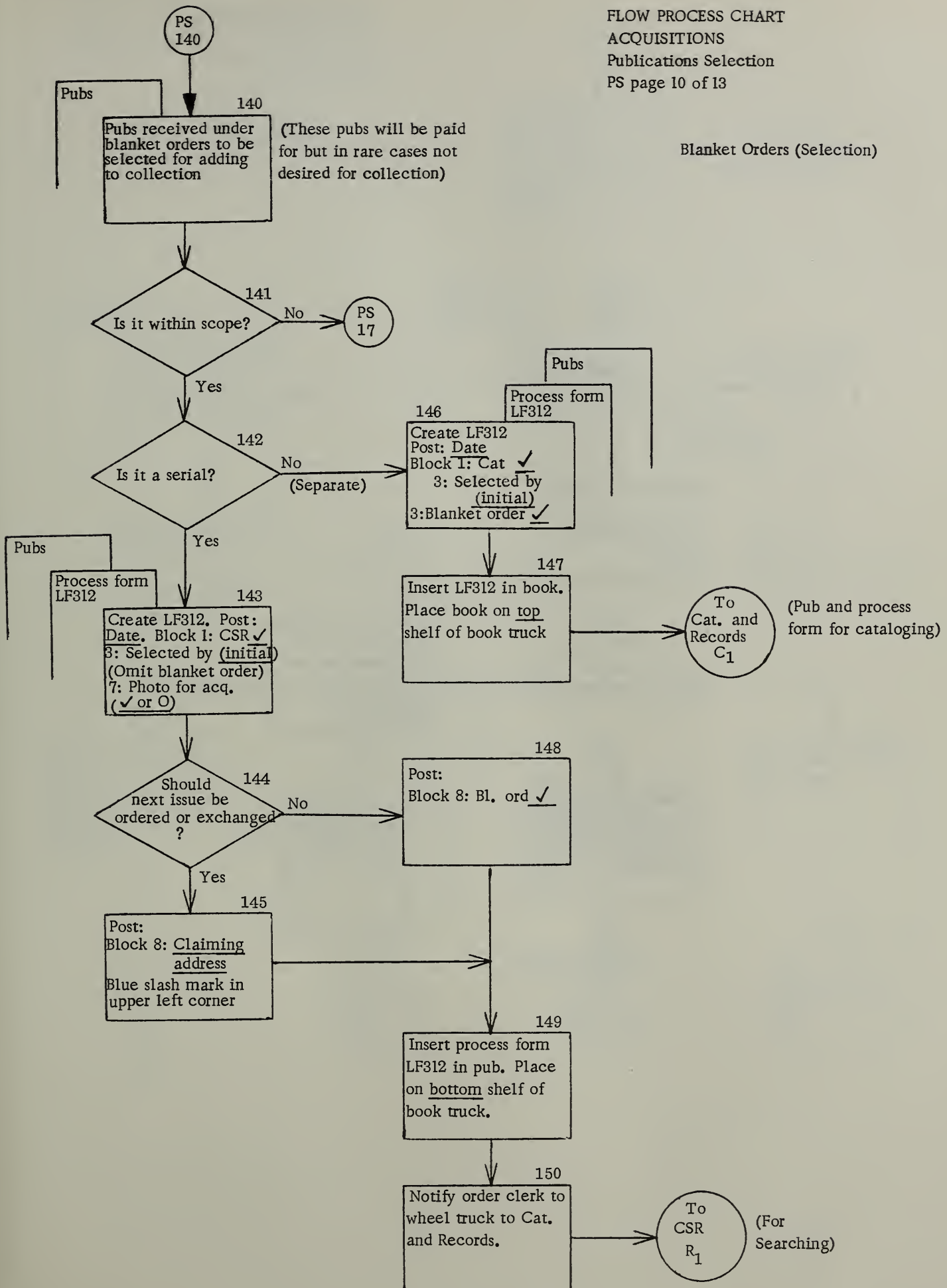
"FARMINGTON PLAN"

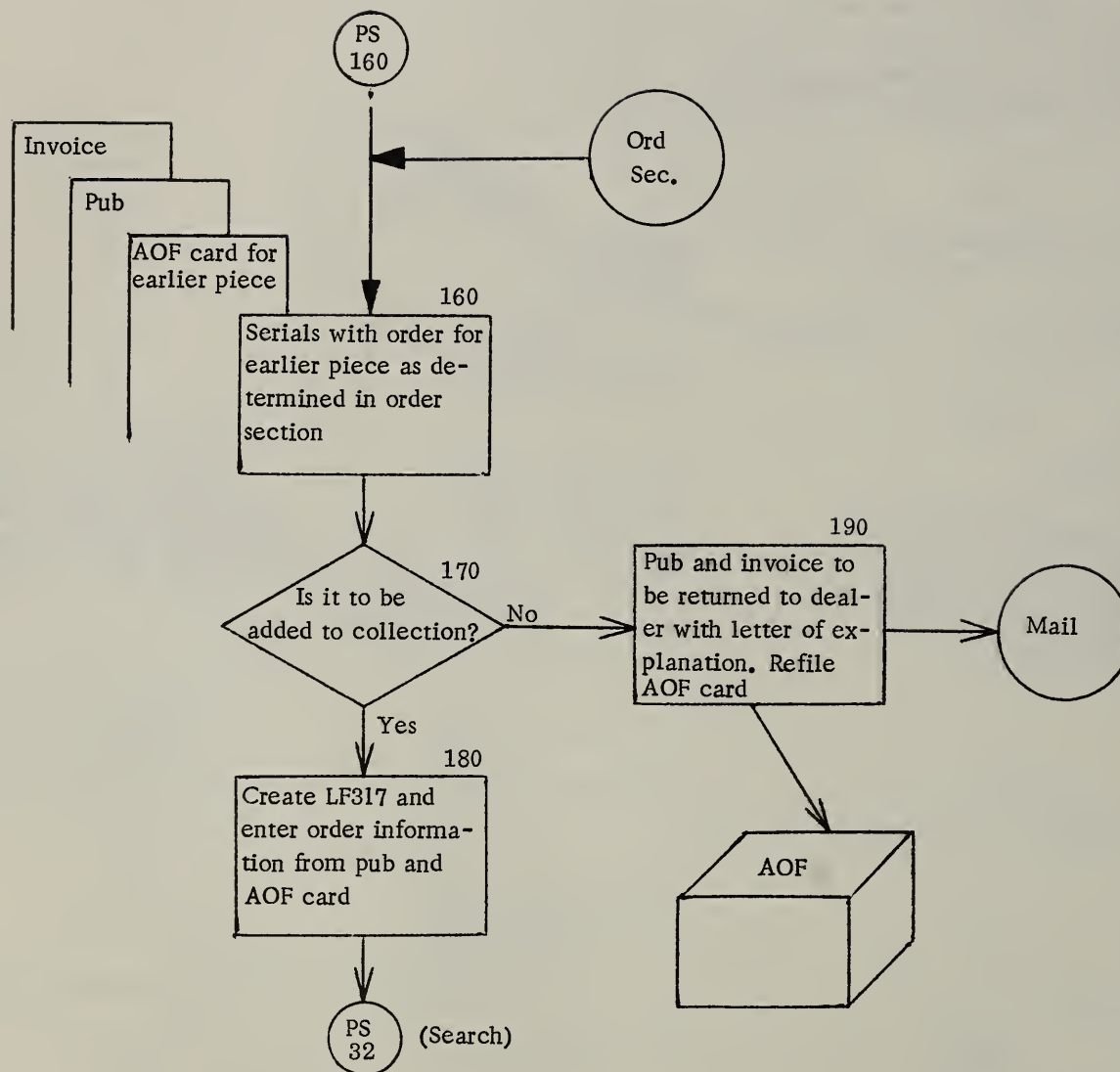
Cooperative acquisition plan with college and Research Libraries operating since World War II (1945-49)  
Foreign dealers have authority to purchase within subject field assigned to each cooperating Agency.  
NAL field is limited to:  
    Agri. in Greece  
    History of Agric.  
NAL accepts whatever is sent within its field of responsibility.





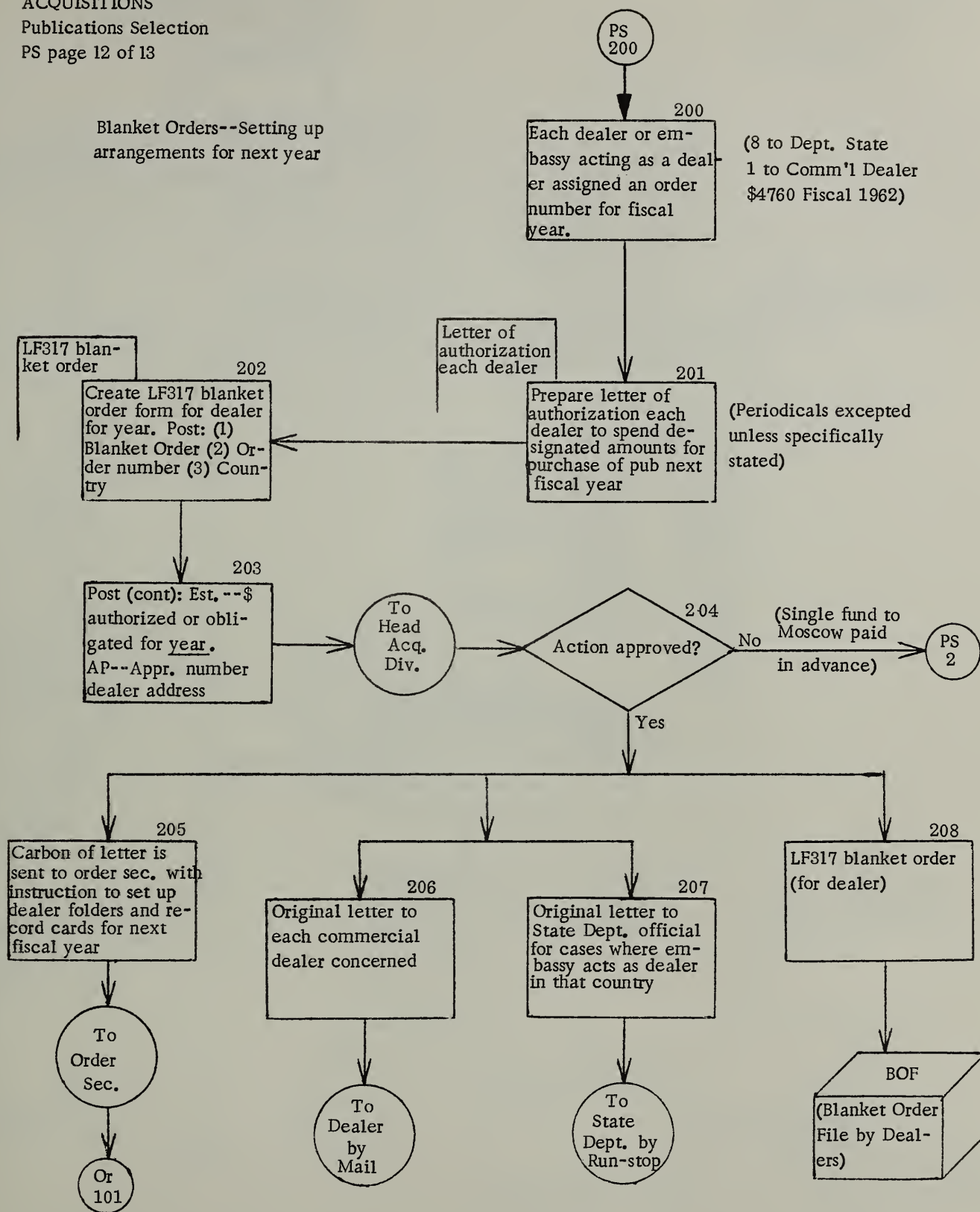
Blanket Orders (Selection)



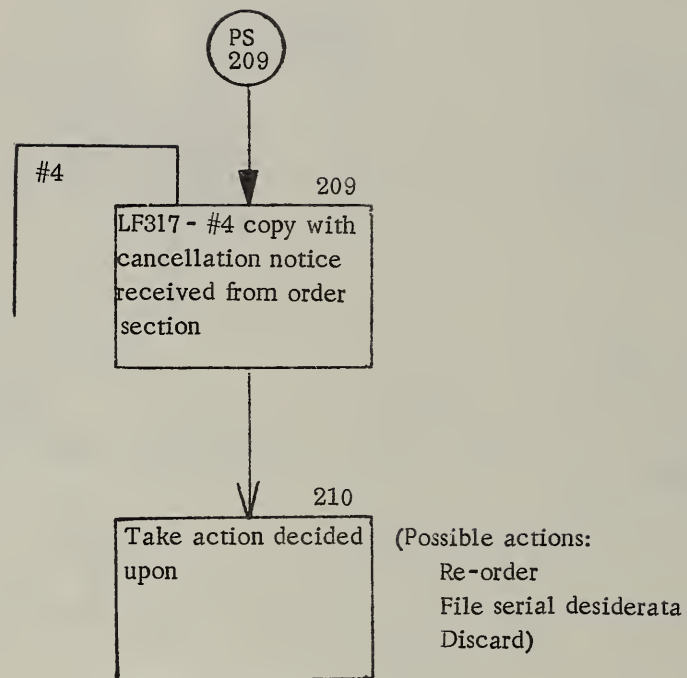




Blanket Orders--Setting up  
arrangements for next year

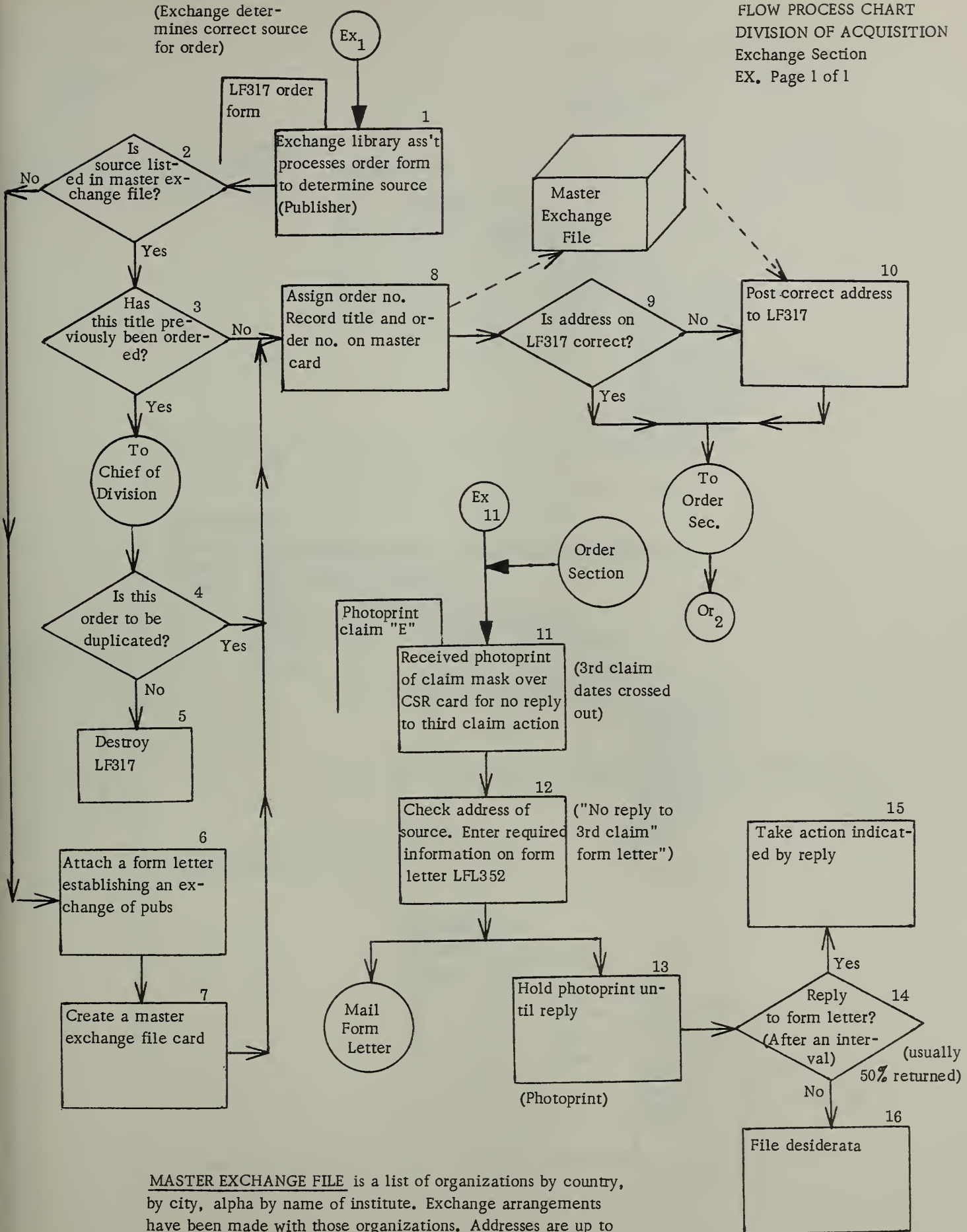


Cancellations





(Exchange determines correct source for order)



T E C H N I C A L   S E R V I C E S

DIVISION OF CATALOG AND RECORDS

Catalog Section

Flow Process Charts

11 pages

Blocks coded A, C, D, E, F

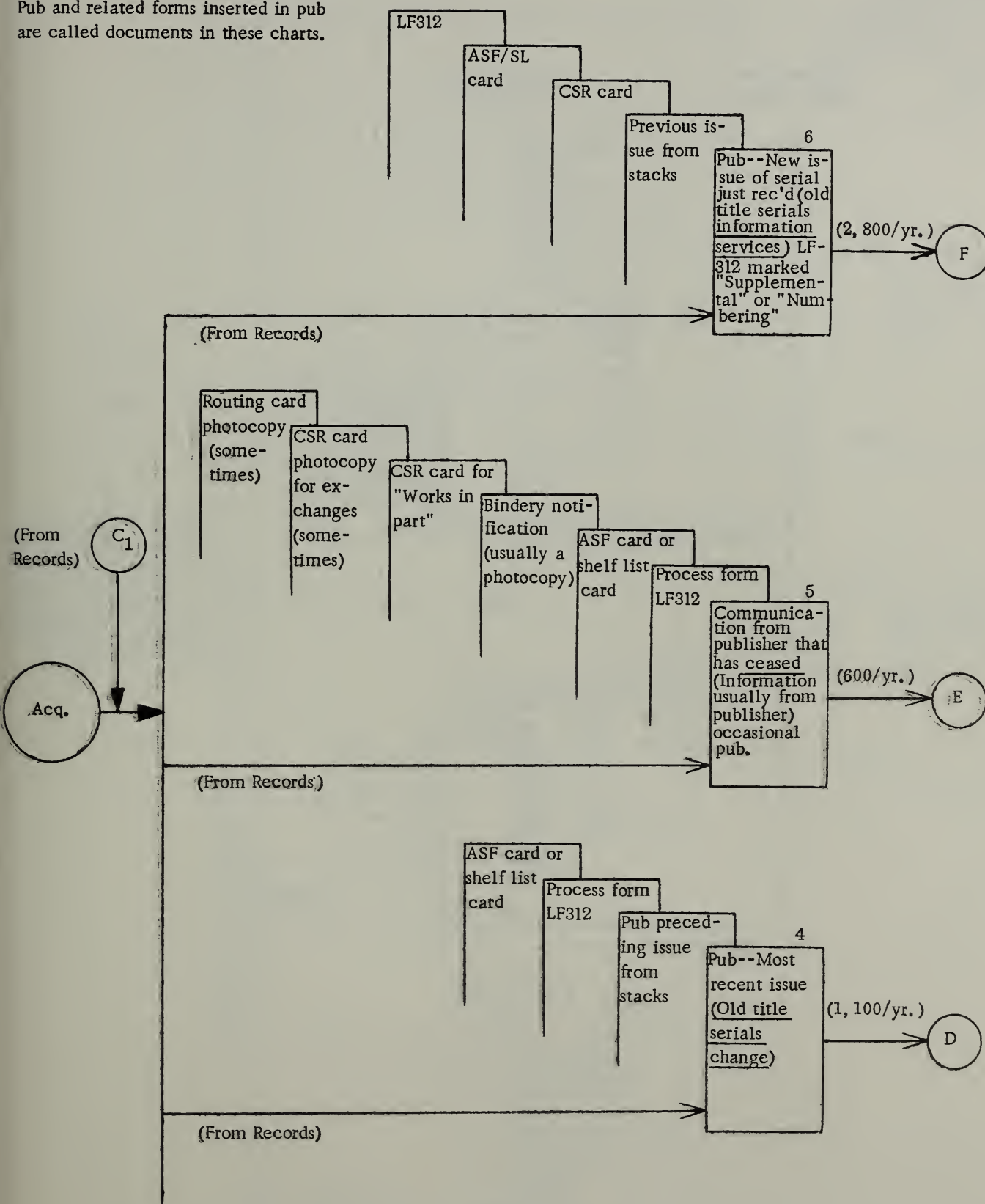


Pubs may be in form of:

Serials  
Monographs  
Photos  
Maps  
Films

Forms are kept with pub during process.  
Pub and related forms inserted in pub  
are called documents in these charts.

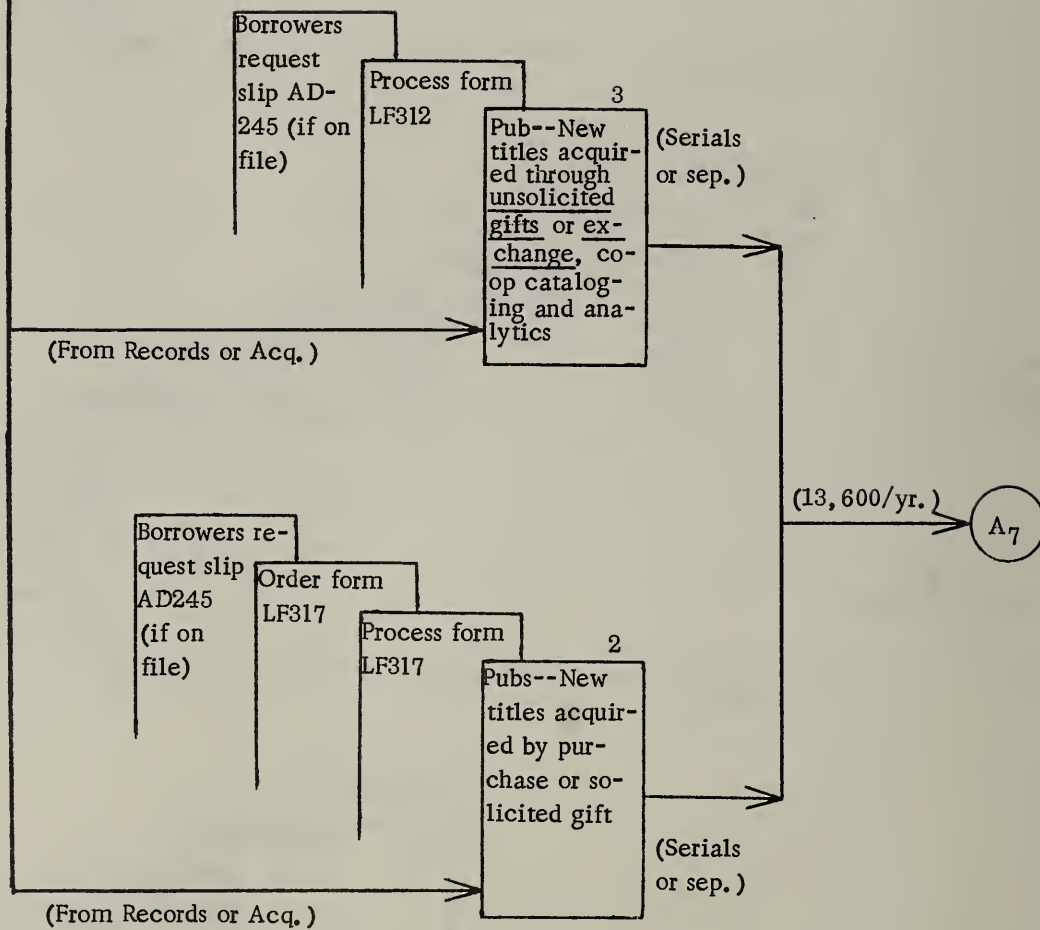
FLOW PROCESS CHART  
Division of Catalog and Records  
Catalog Section  
Page 1 of 11

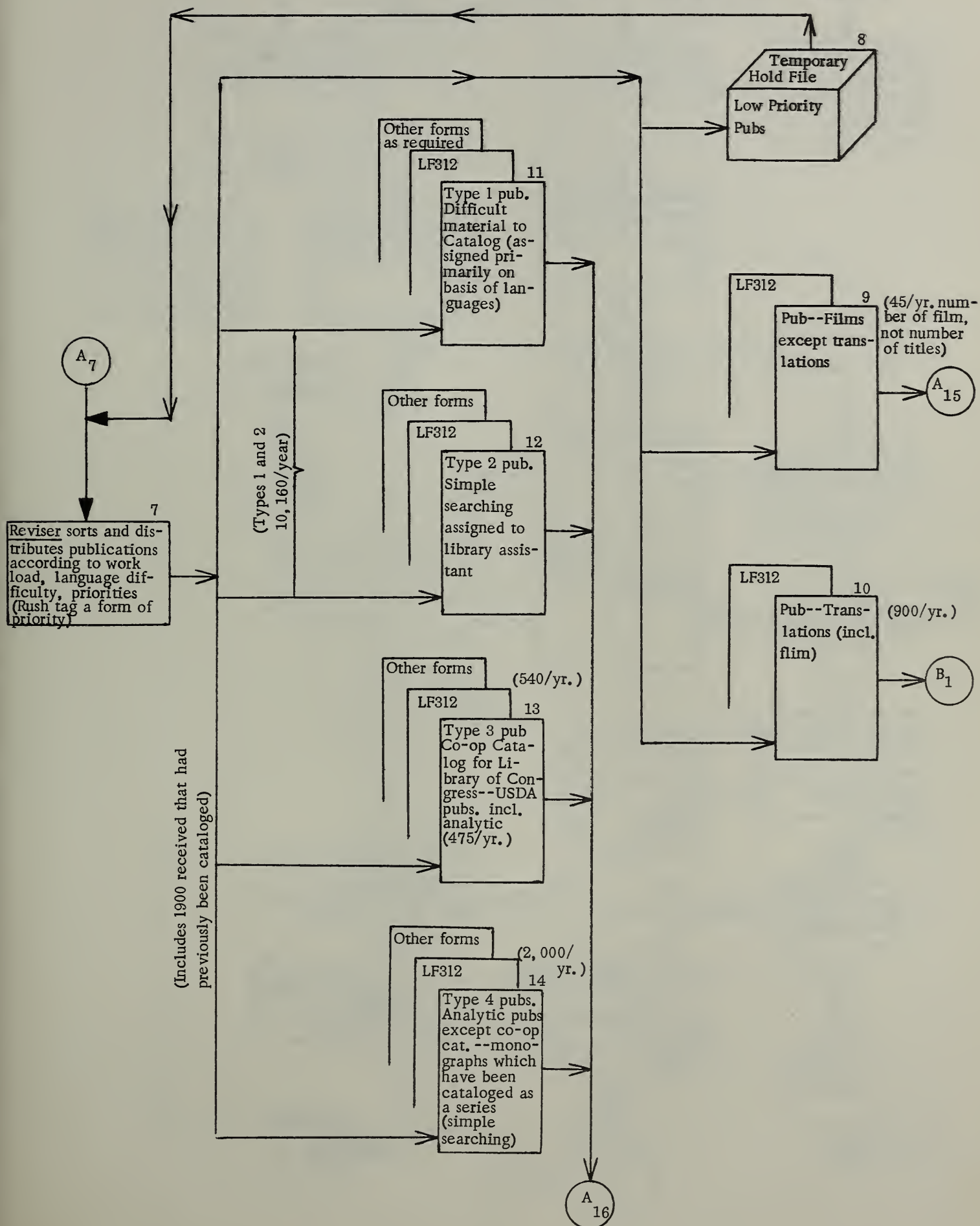


(Cont. on  
Page 2 of 11)

FLOW PROCESS CHART  
 Division of Catalog and Records  
 Catalog Section  
 Page 2 of 11

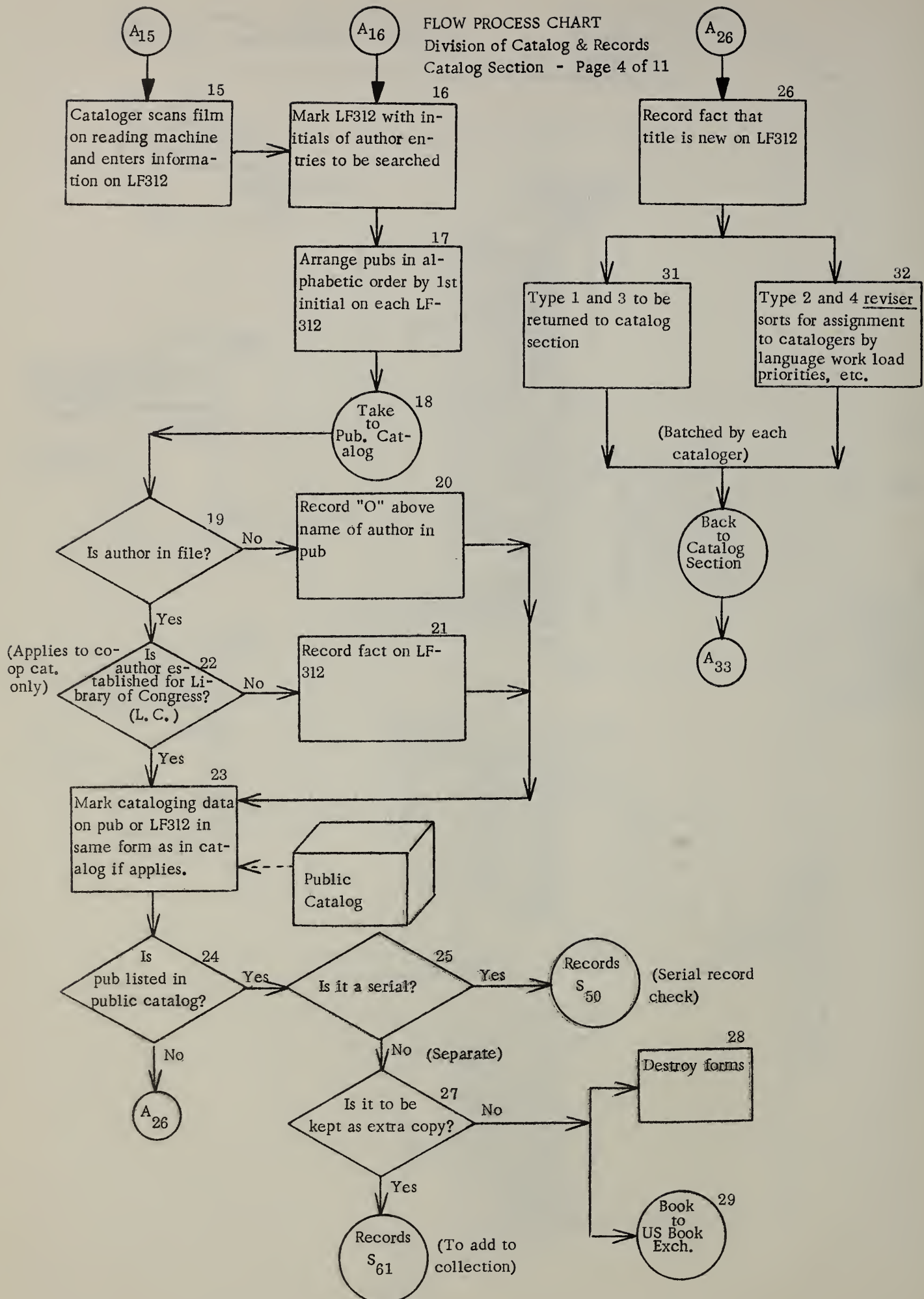
(Contd from  
 Page 1 of 11



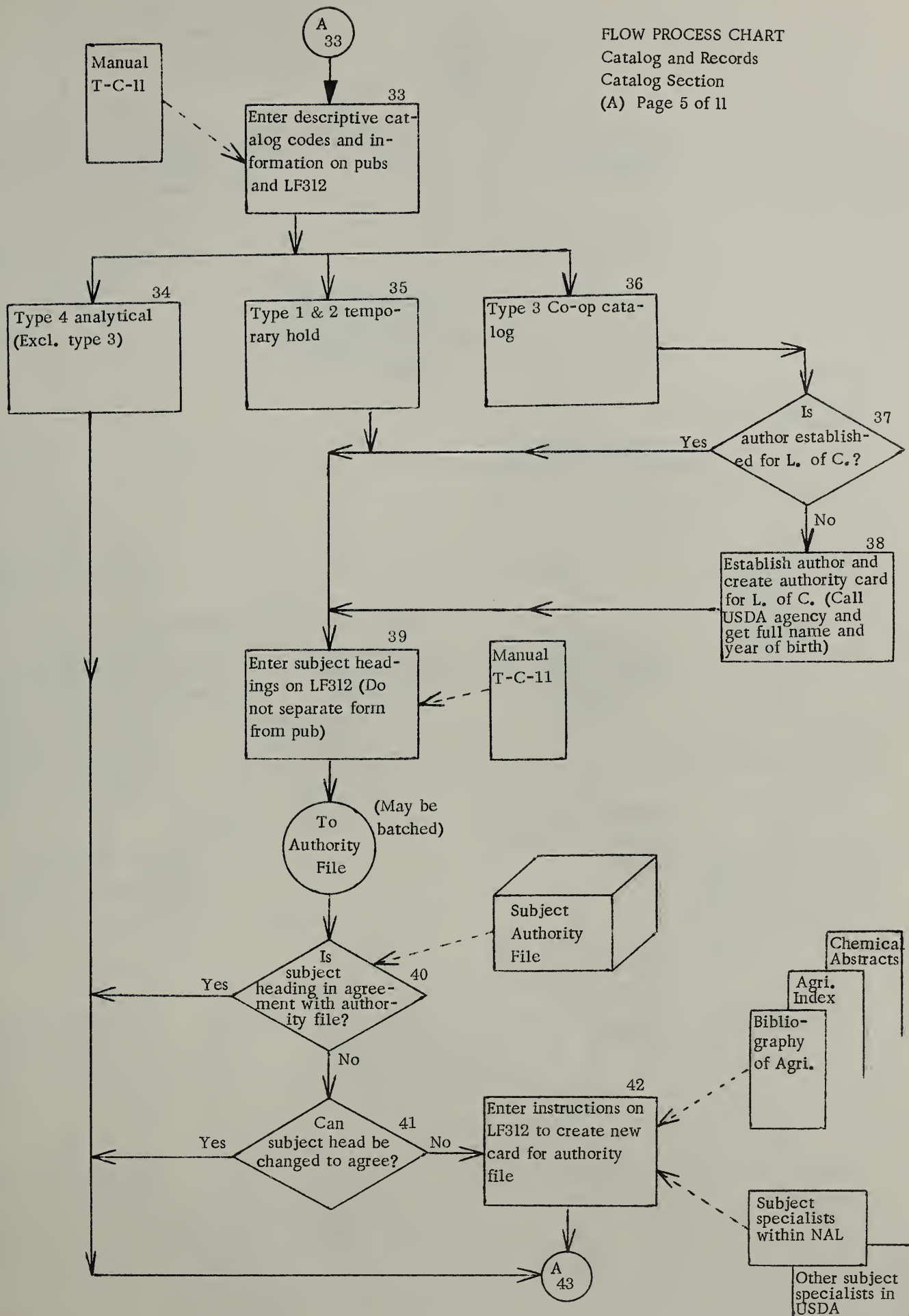




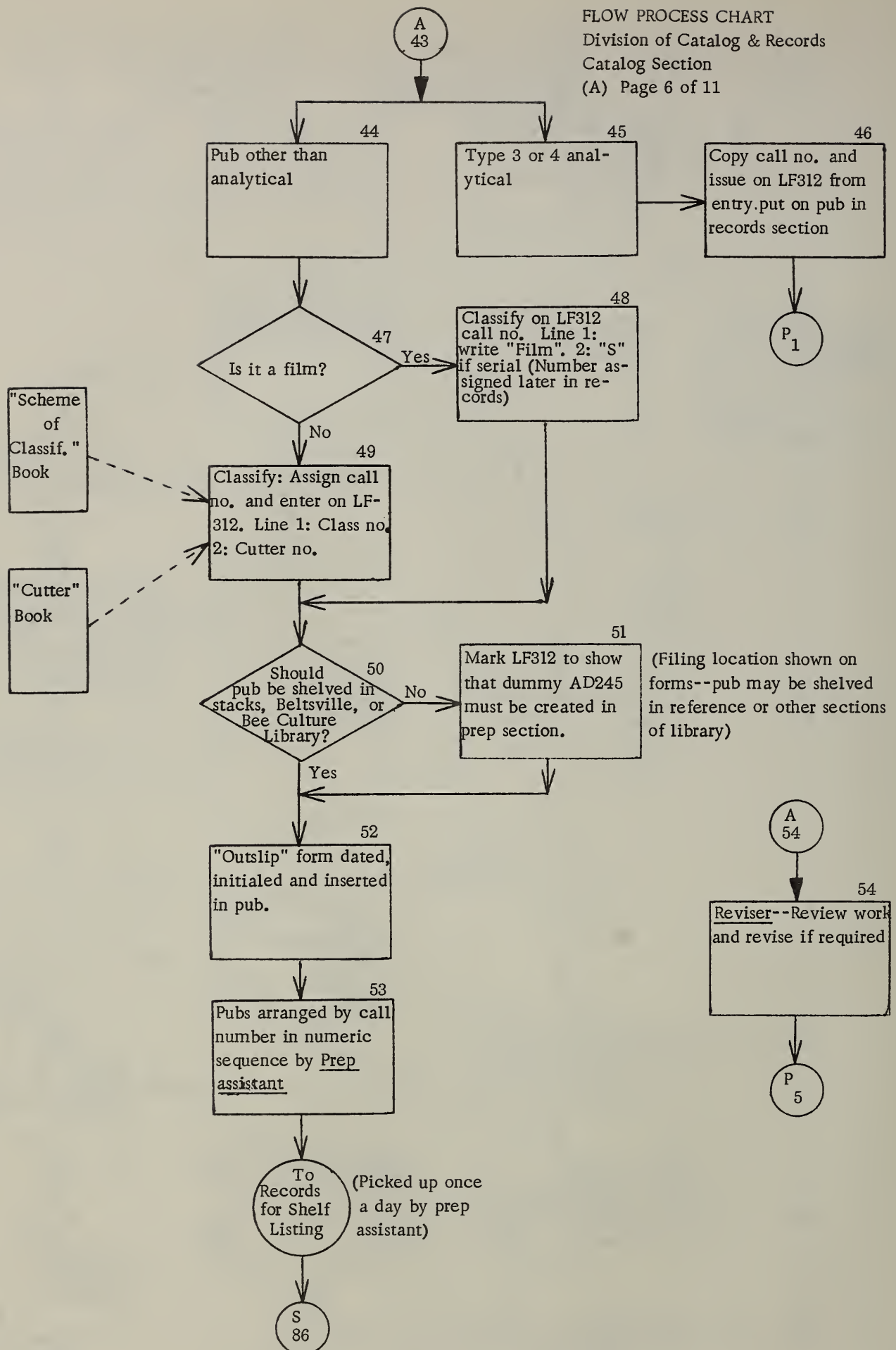
FLOW PROCESS CHART  
Division of Catalog & Records  
Catalog Section - Page 4 of 11



FLOW PROCESS CHART  
Catalog and Records  
Catalog Section  
(A) Page 5 of 11



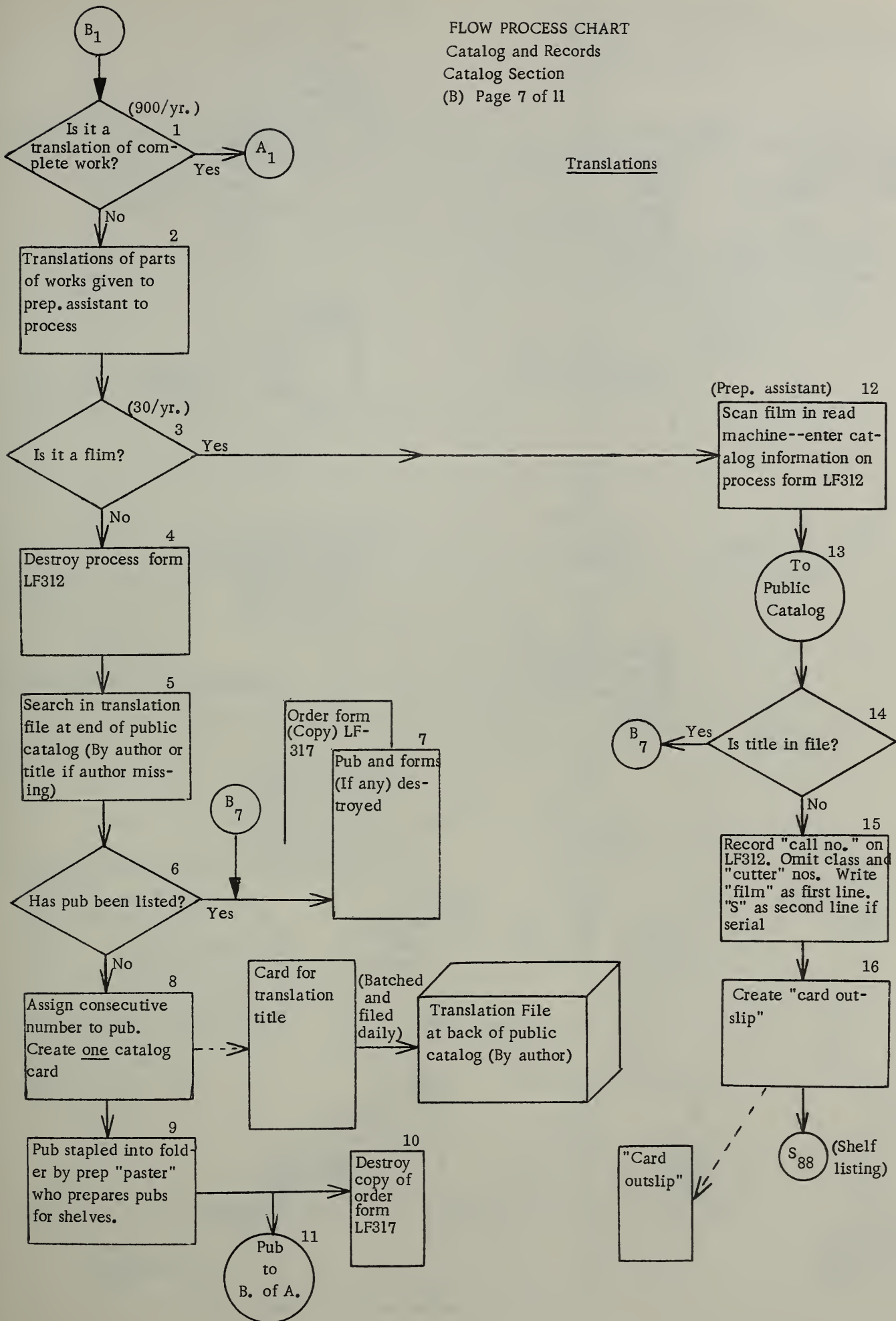
FLOW PROCESS CHART  
Division of Catalog & Records  
Catalog Section  
(A) Page 6 of 11



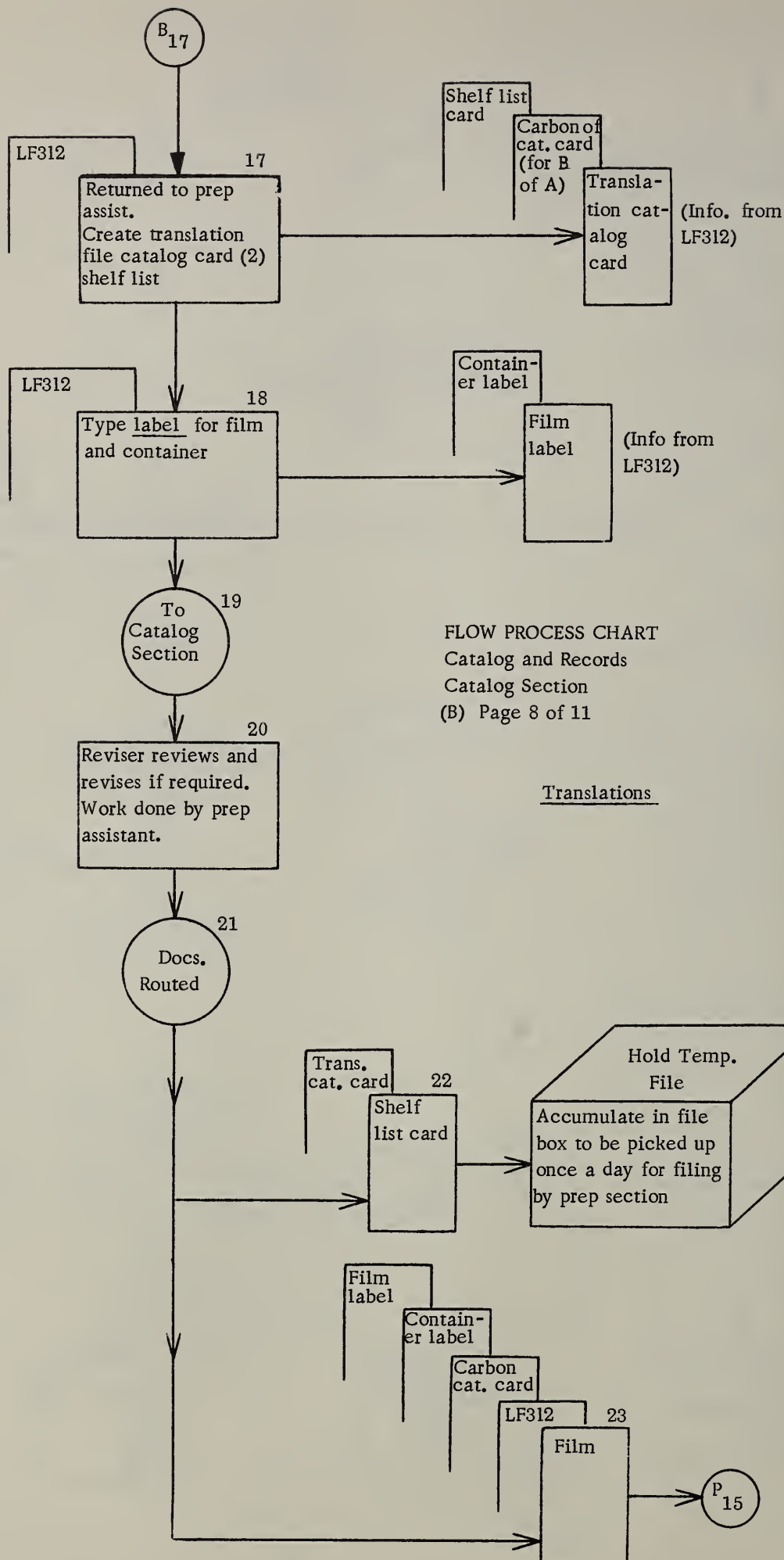


FLOW PROCESS CHART  
Catalog and Records  
Catalog Section  
(B) Page 7 of 11

Translations



(Cat. card shows cat.  
inform. and next  
consec. no. assigned)



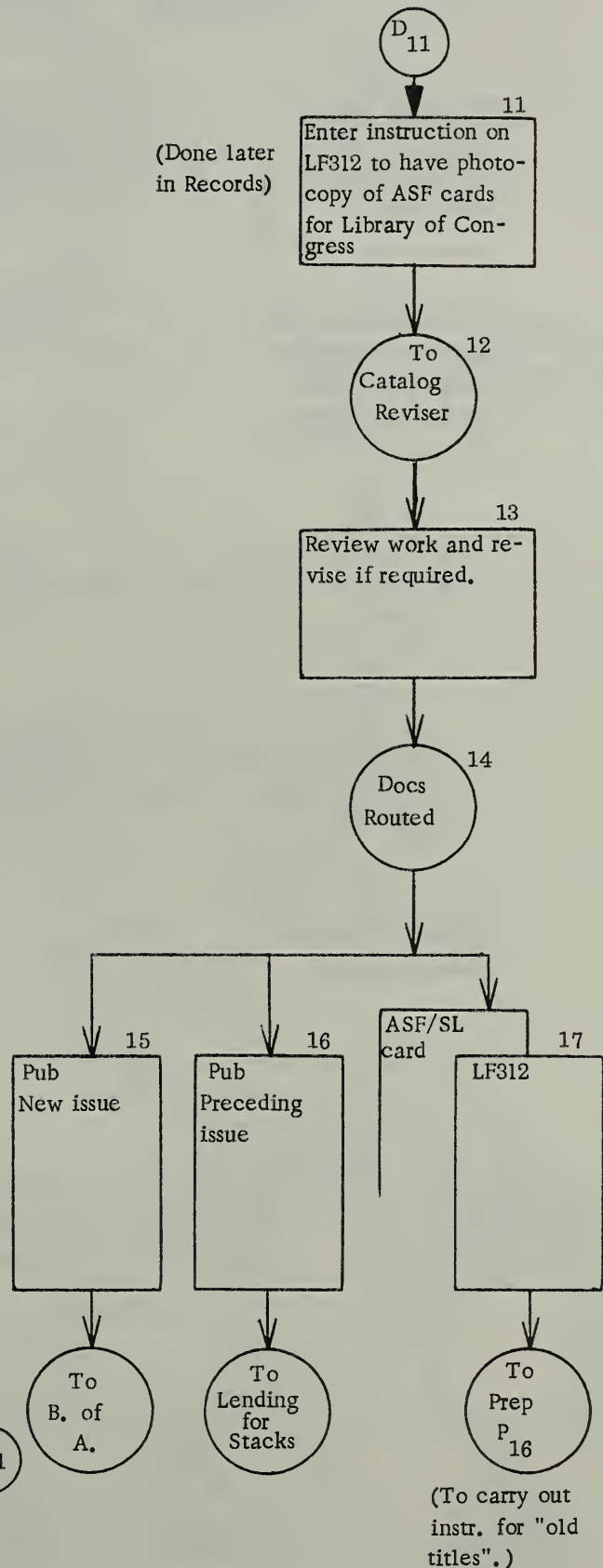
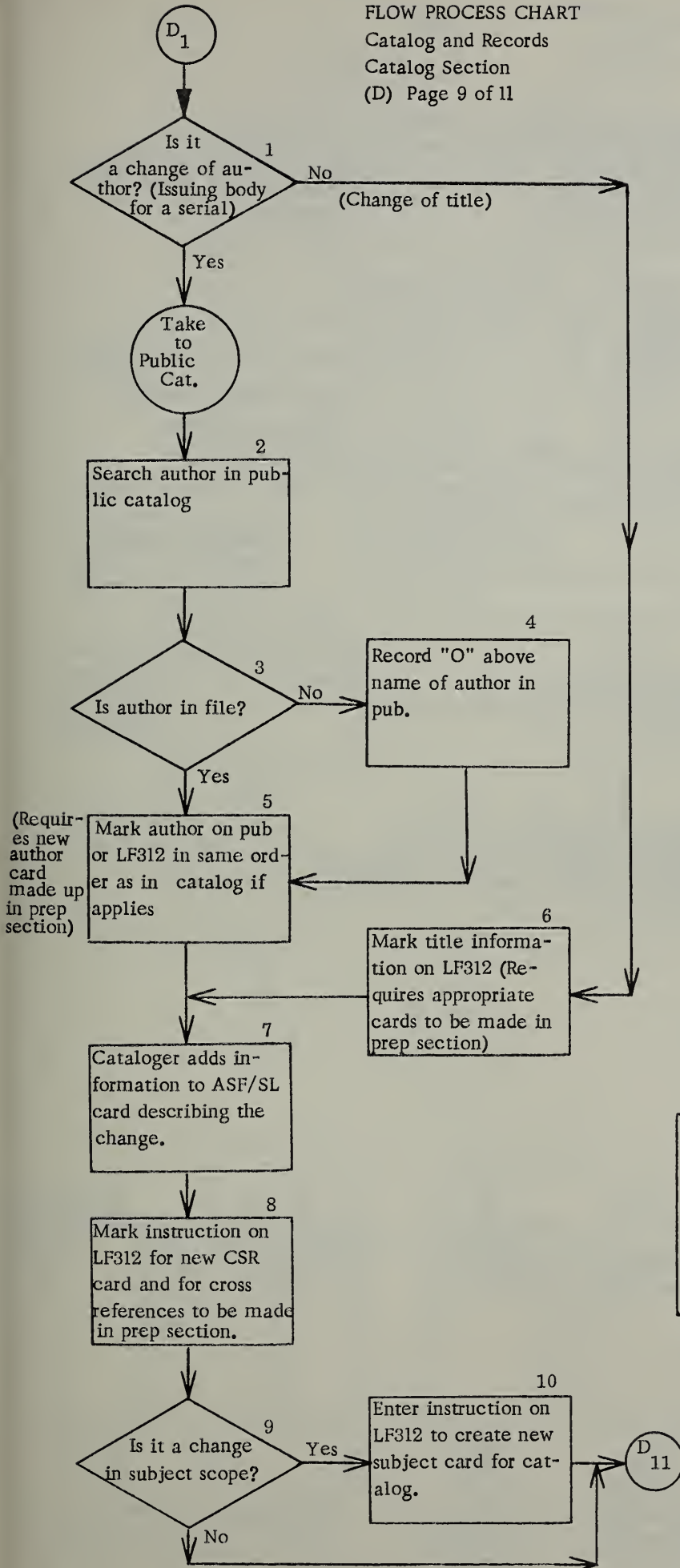
FLOW PROCESS CHART  
Catalog and Records  
Catalog Section  
(B) Page 8 of 11

Translations

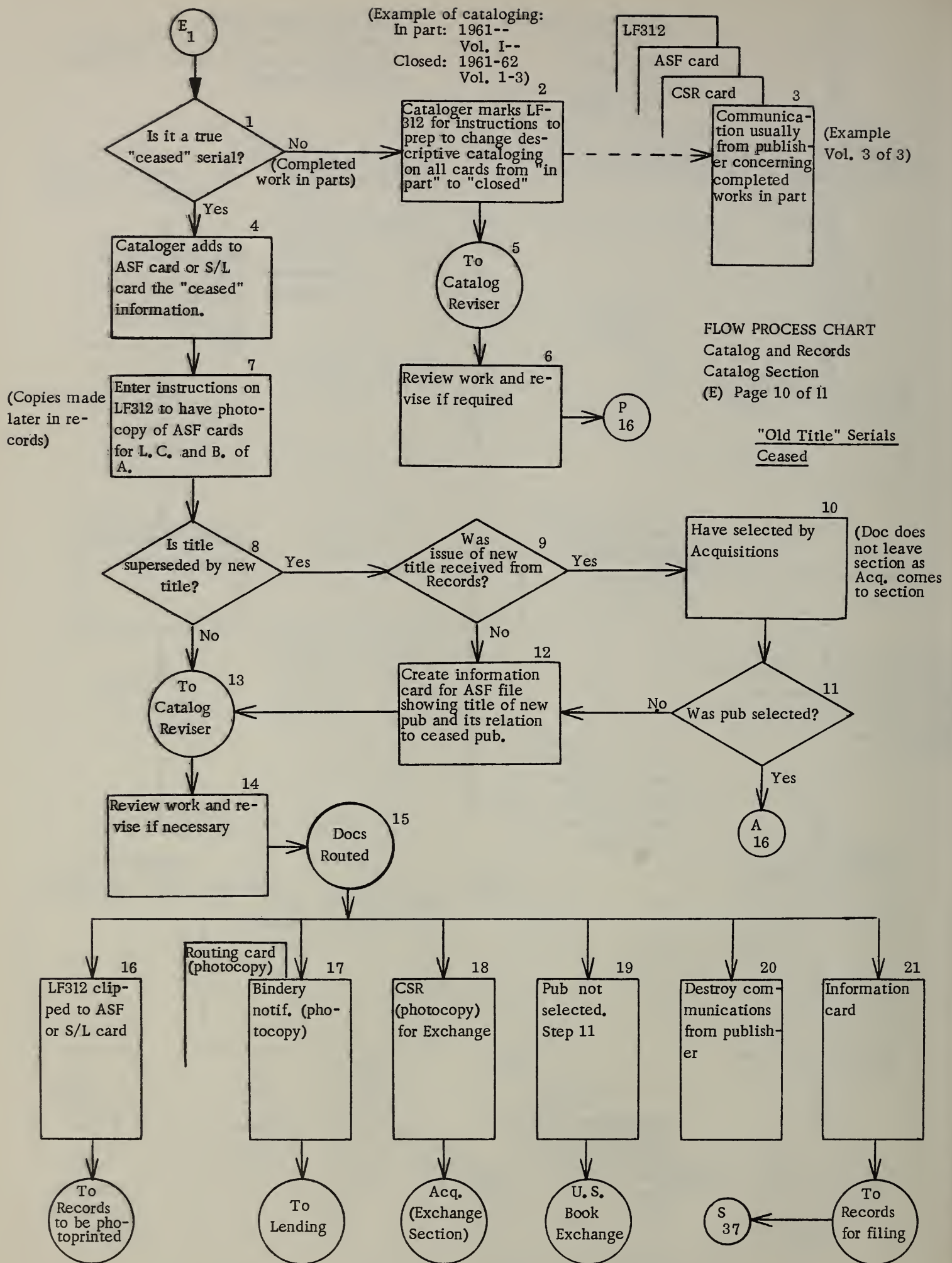
FLOW PROCESS CHART  
Catalog and Records  
Catalog Section  
(D) Page 9 of 11

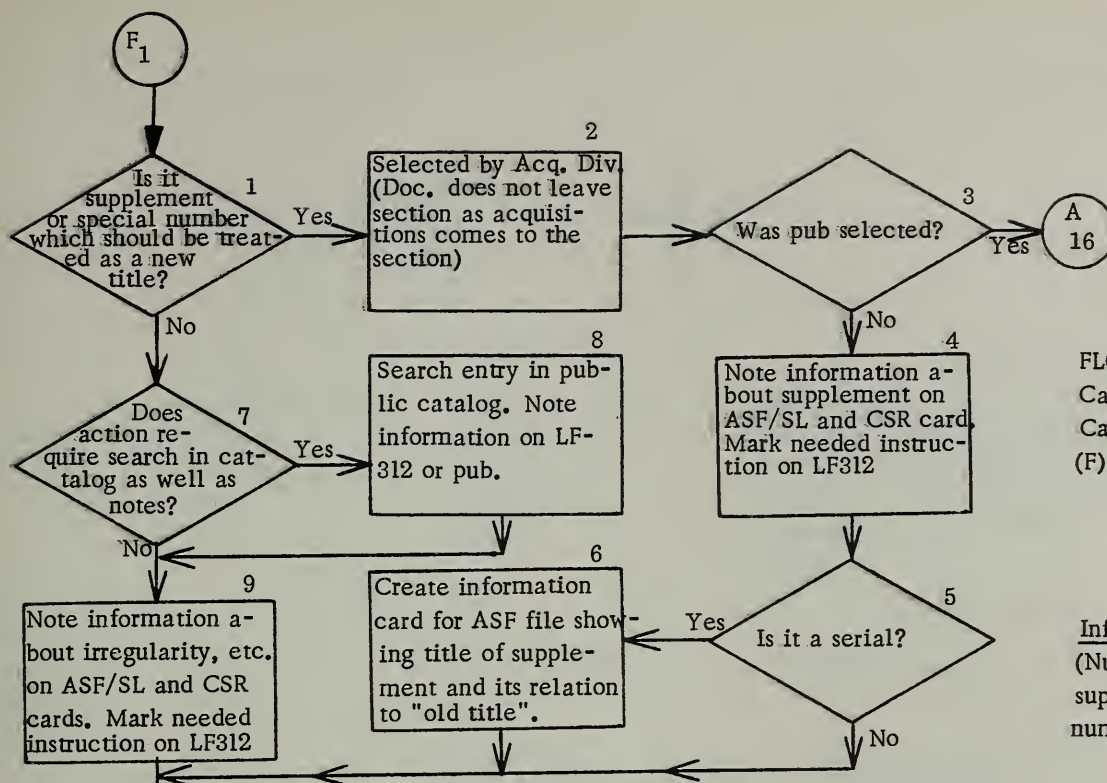
"Old Title" Serials Changed

(A serial title or issuing office is changed but publication not changed essentially. Determination made in Records.)









FLOW PROCESS CHART  
Catalog and Records  
Catalog Section  
(F) Page 11 of 11

"Old Title" Serials  
Information Services  
(Numbering irregularities, supplements and special numbers)

To Reviser

10  
Review work and revise if required

11  
Are cards to be made in preparations section?

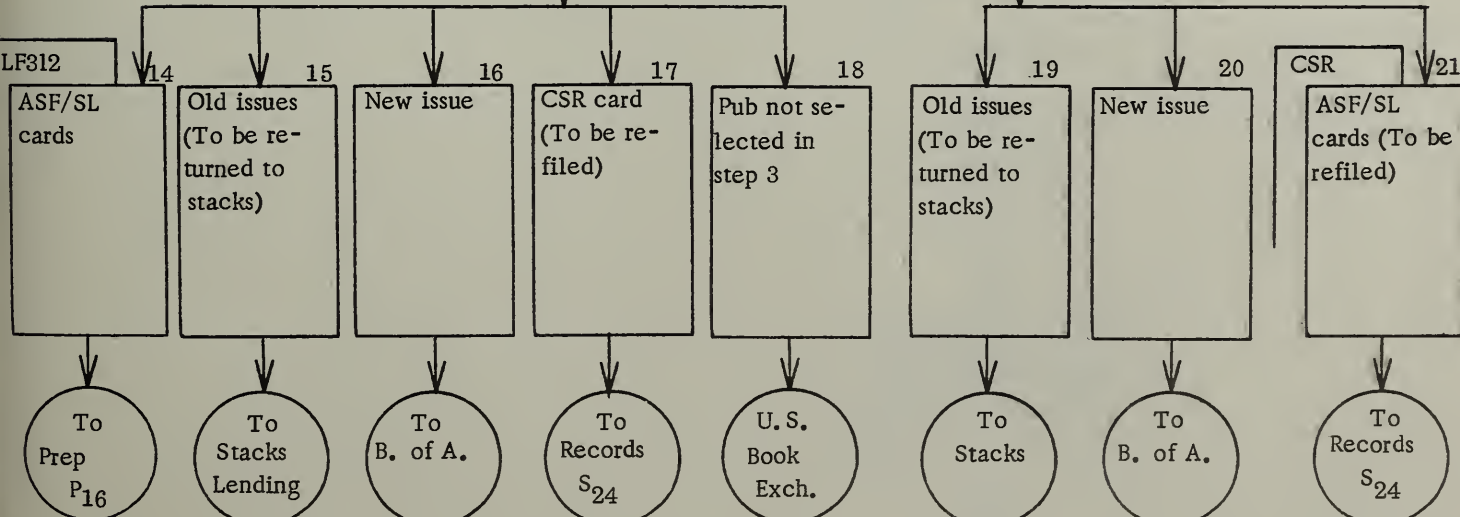
12  
Is change required in serial records? (By CSR assistant)

To Records  
R<sub>34</sub>

Docs Routed

Docs Routed

13  
Destroy LF312



T E C H N I C A L   S E R V I C E S

DIVISION OF CATALOG AND RECORDS

Records Section

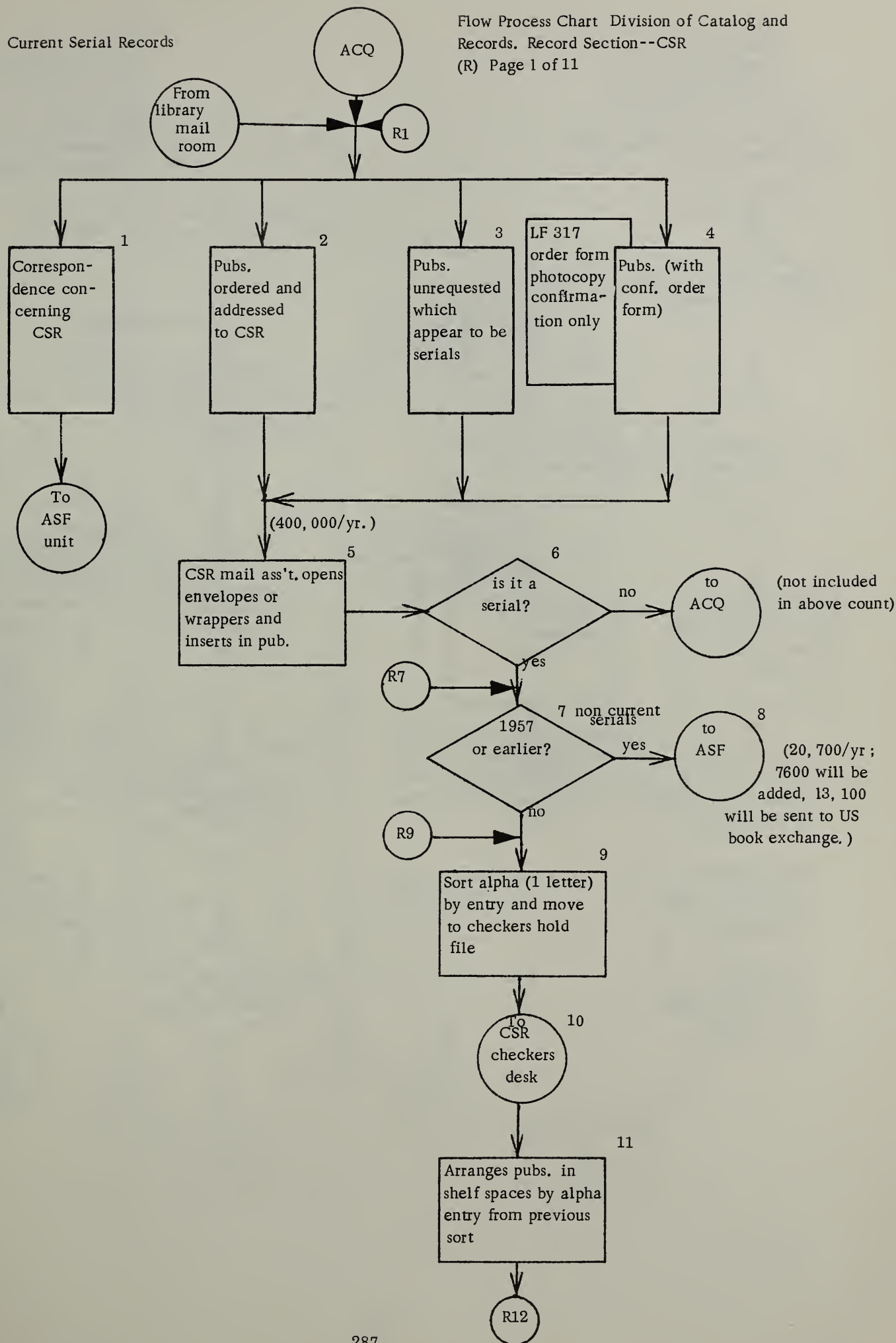
Current Serial Records Unit (CSR)

Flow Process Charts

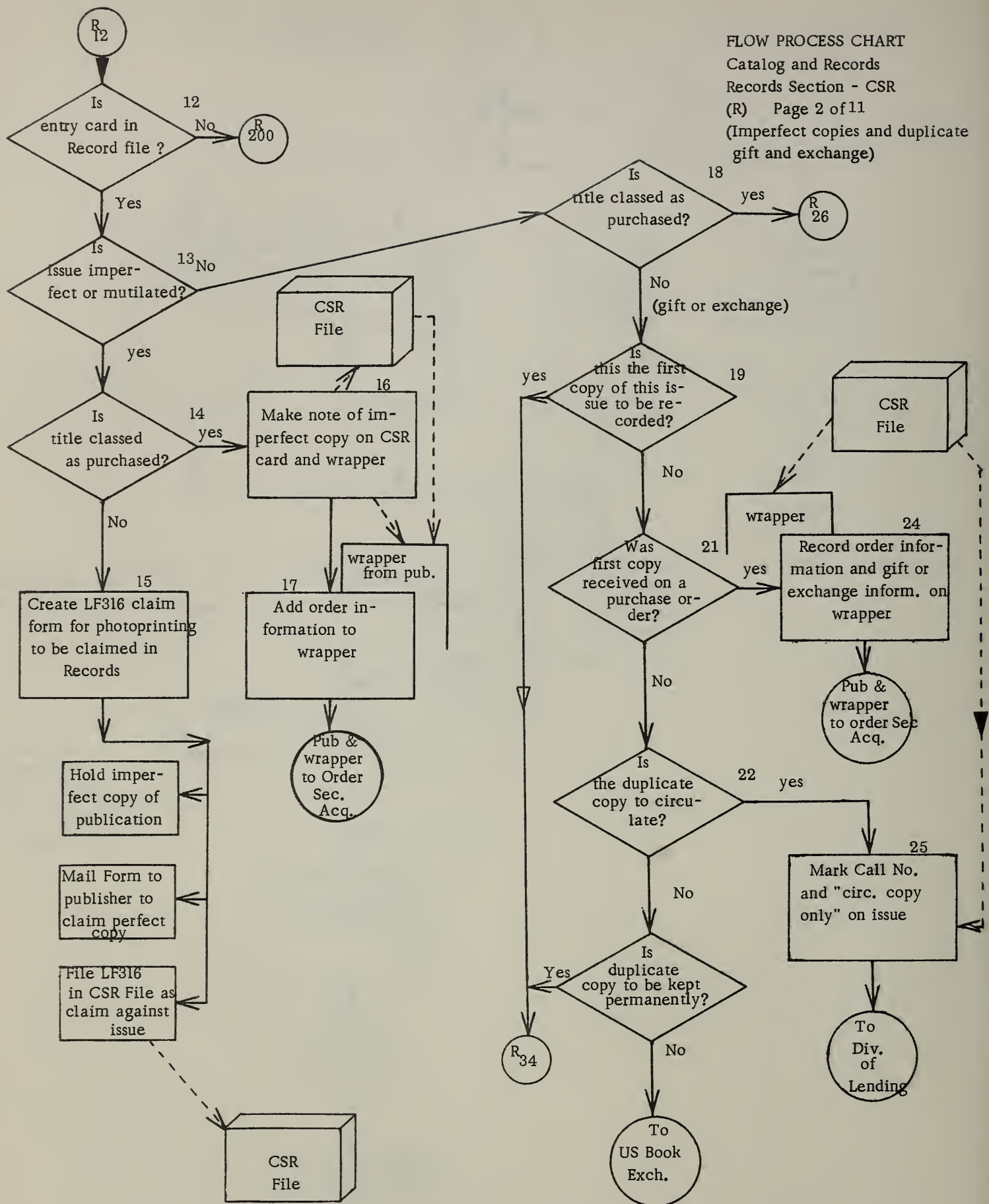
11 pages

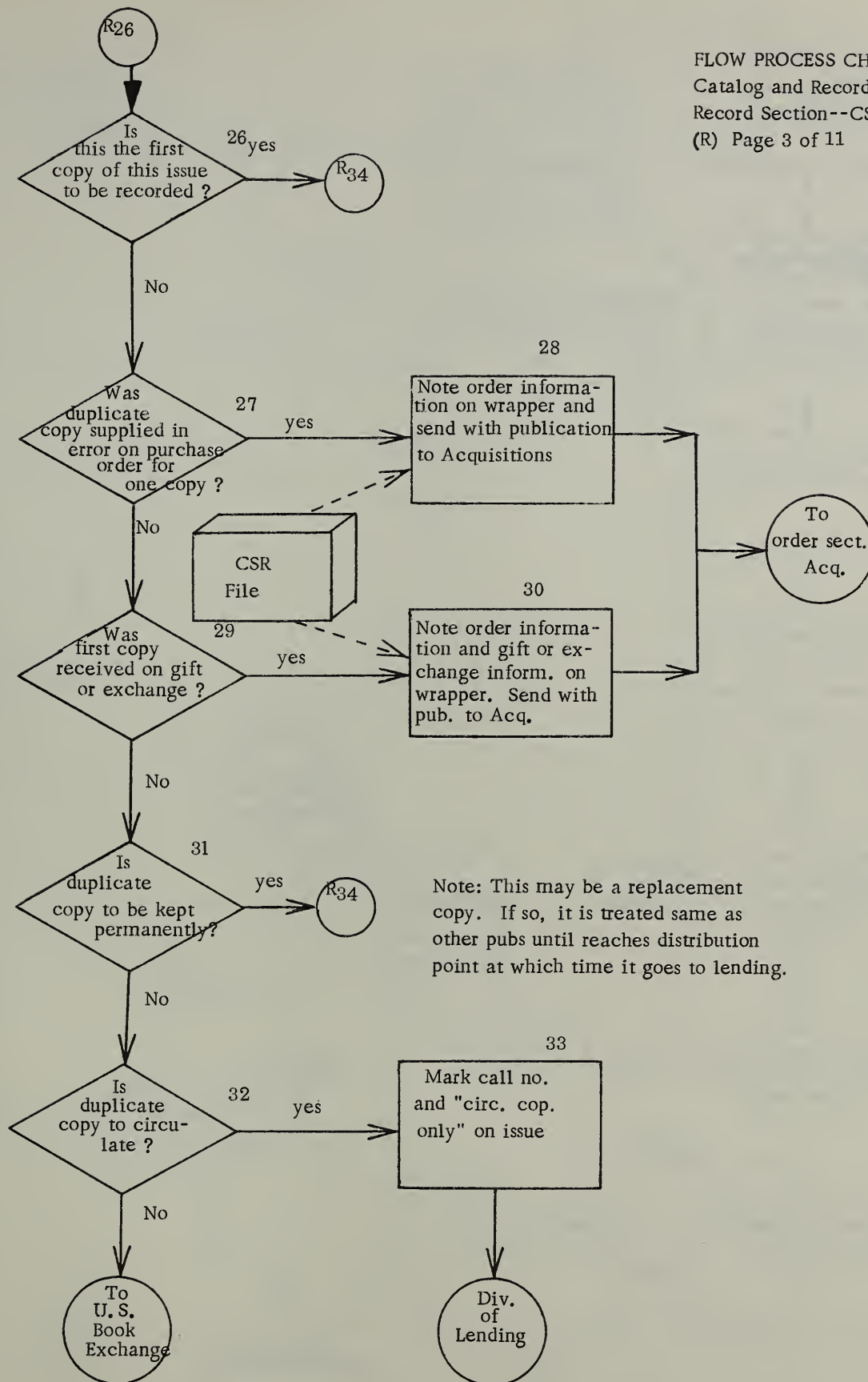
Blocks coded R 1 - R 245



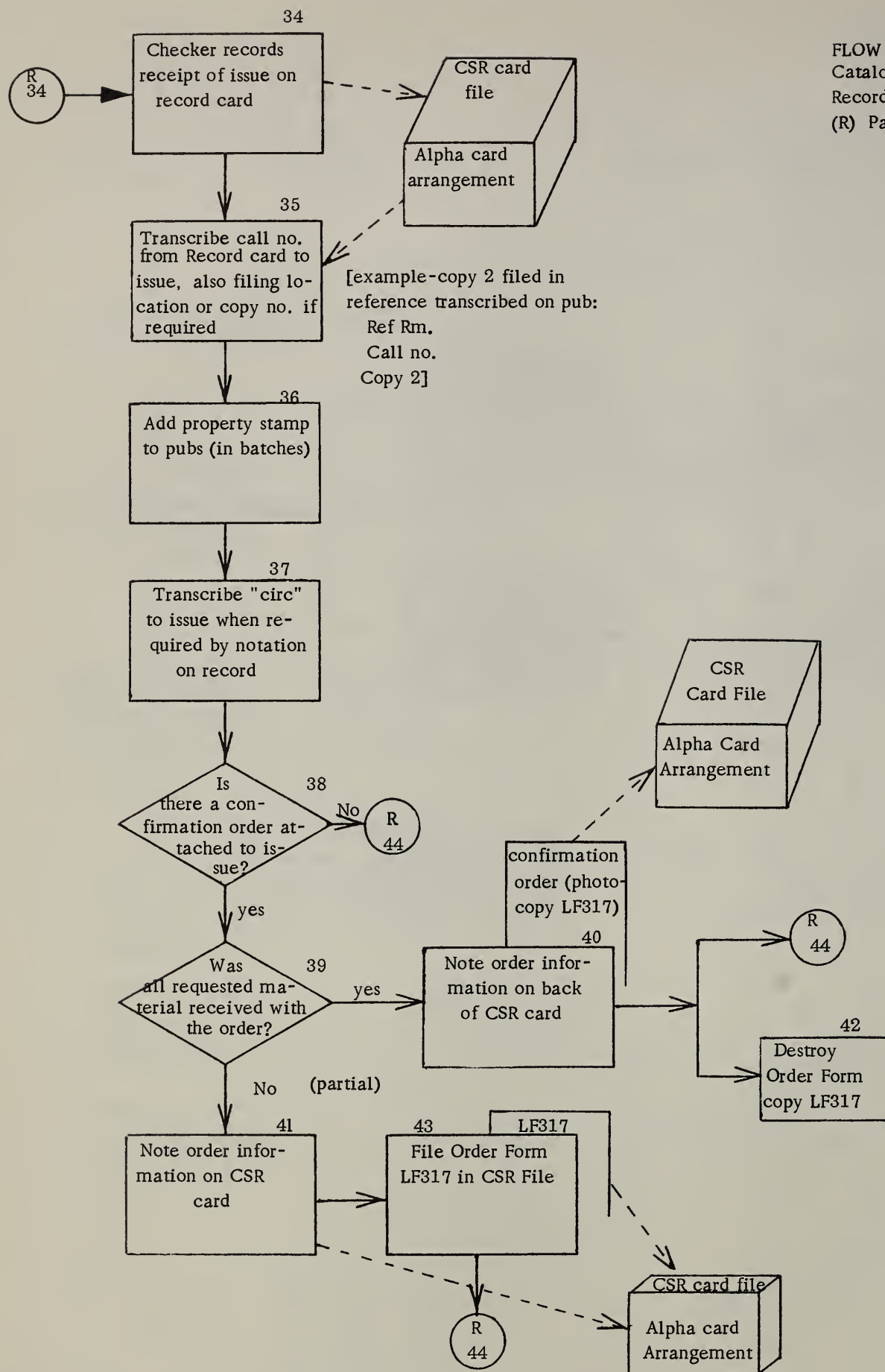


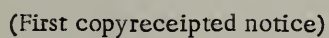
FLOW PROCESS CHART  
Catalog and Records  
Records Section - CSR  
(R) Page 2 of 11  
(Imperfect copies and duplicate  
gift and exchange)



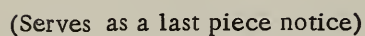






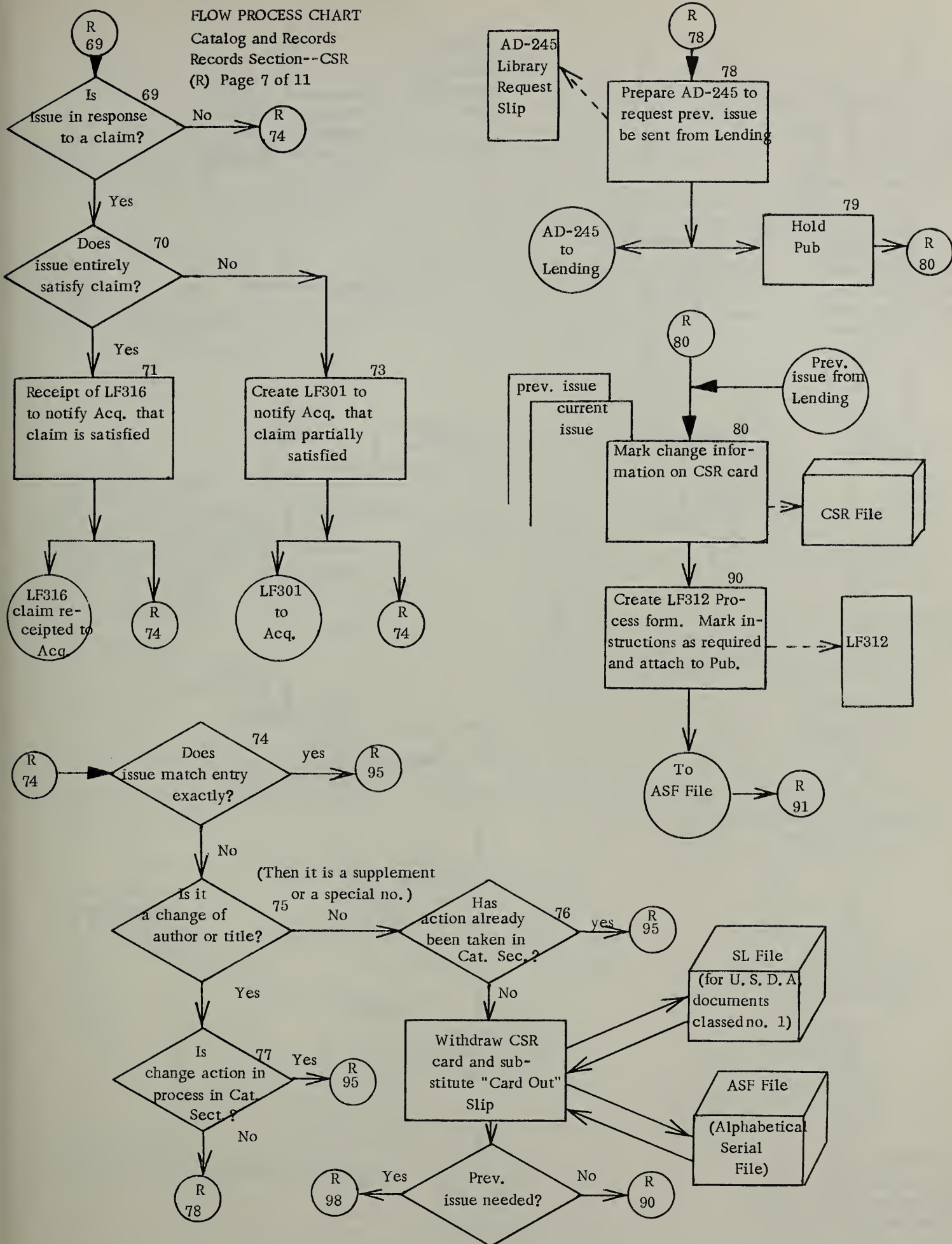


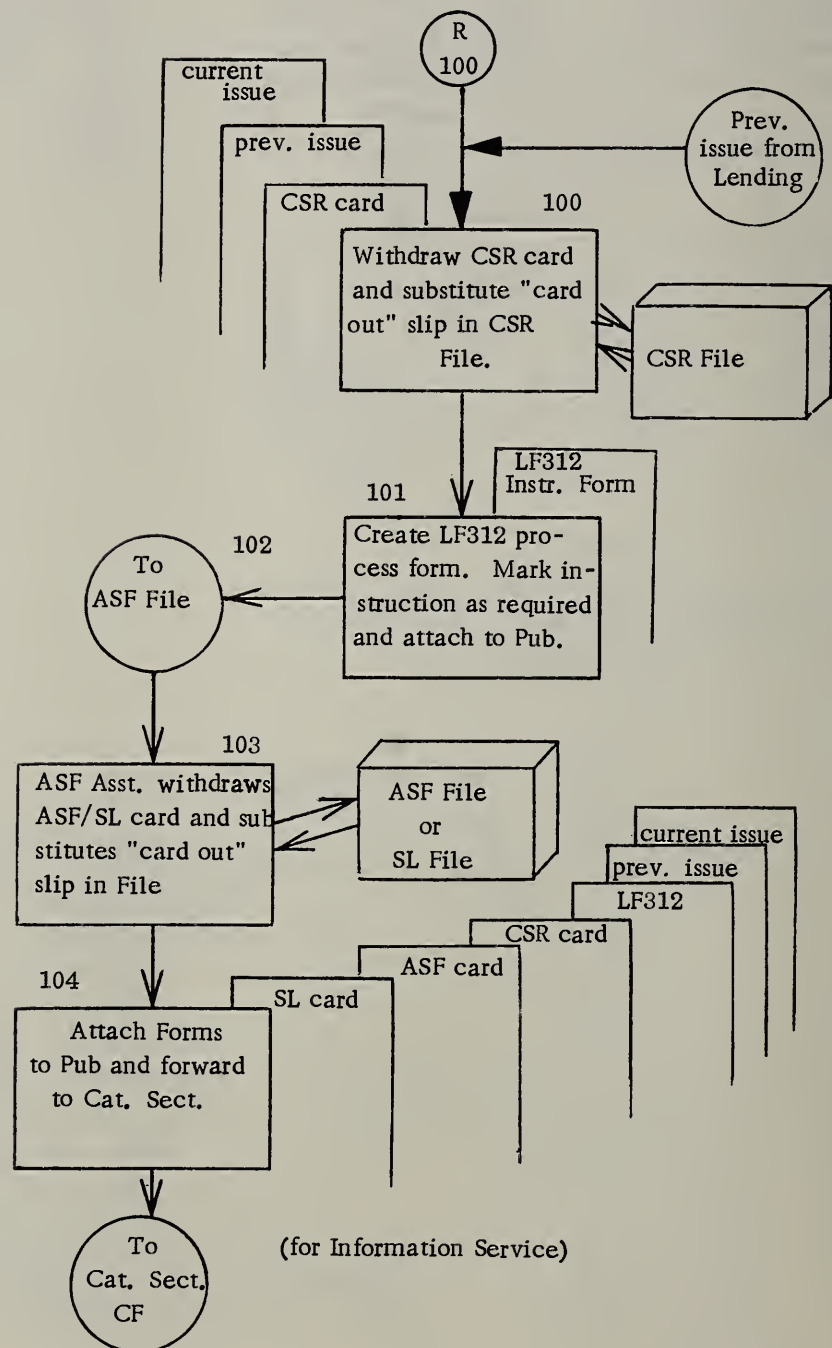
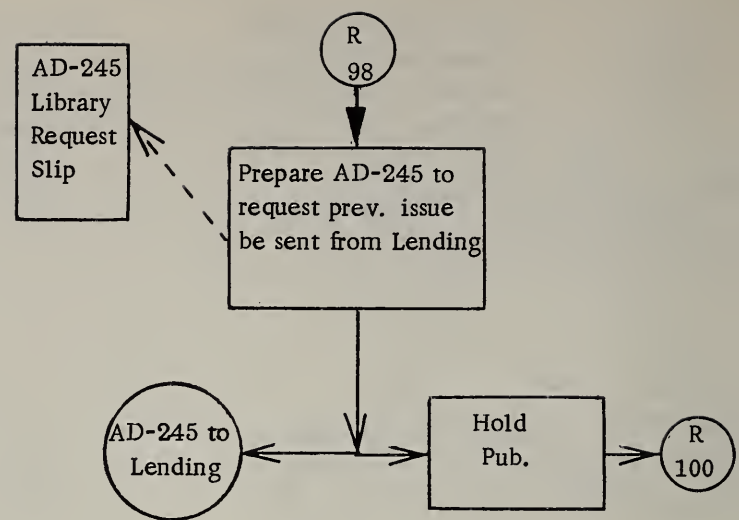
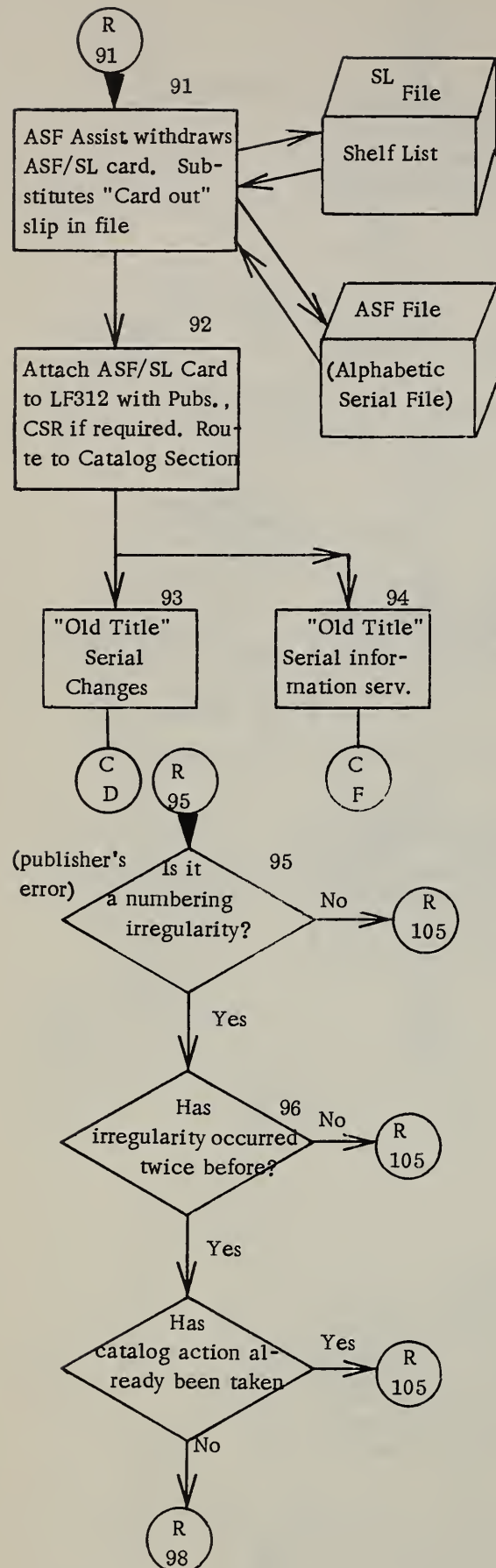
(R) Page 6 of 11 (Purchased--claiming and complete order and bind notice if required)



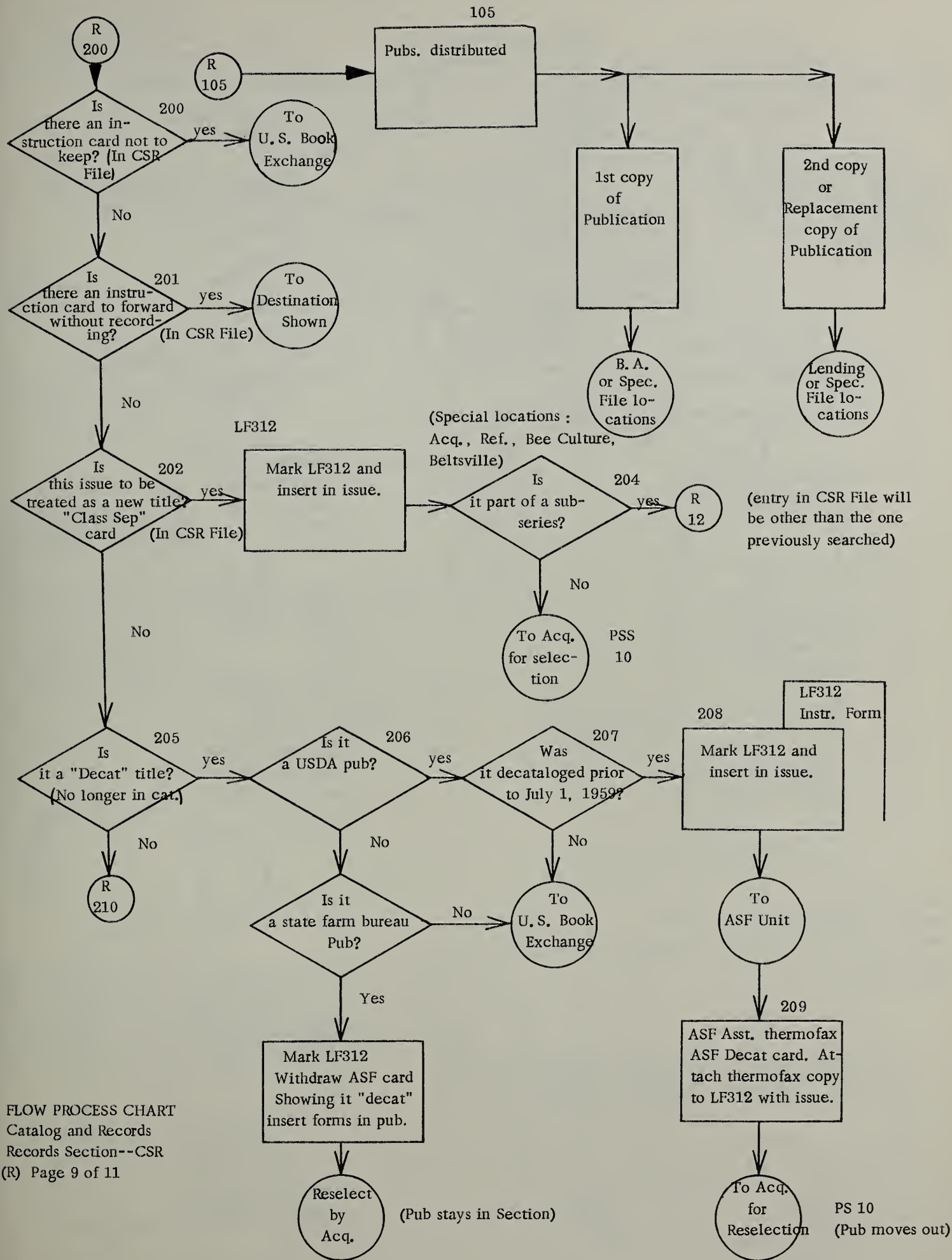


FLOW PROCESS CHART  
Catalog and Records  
Records Section--CSR  
(R) Page 7 of 11

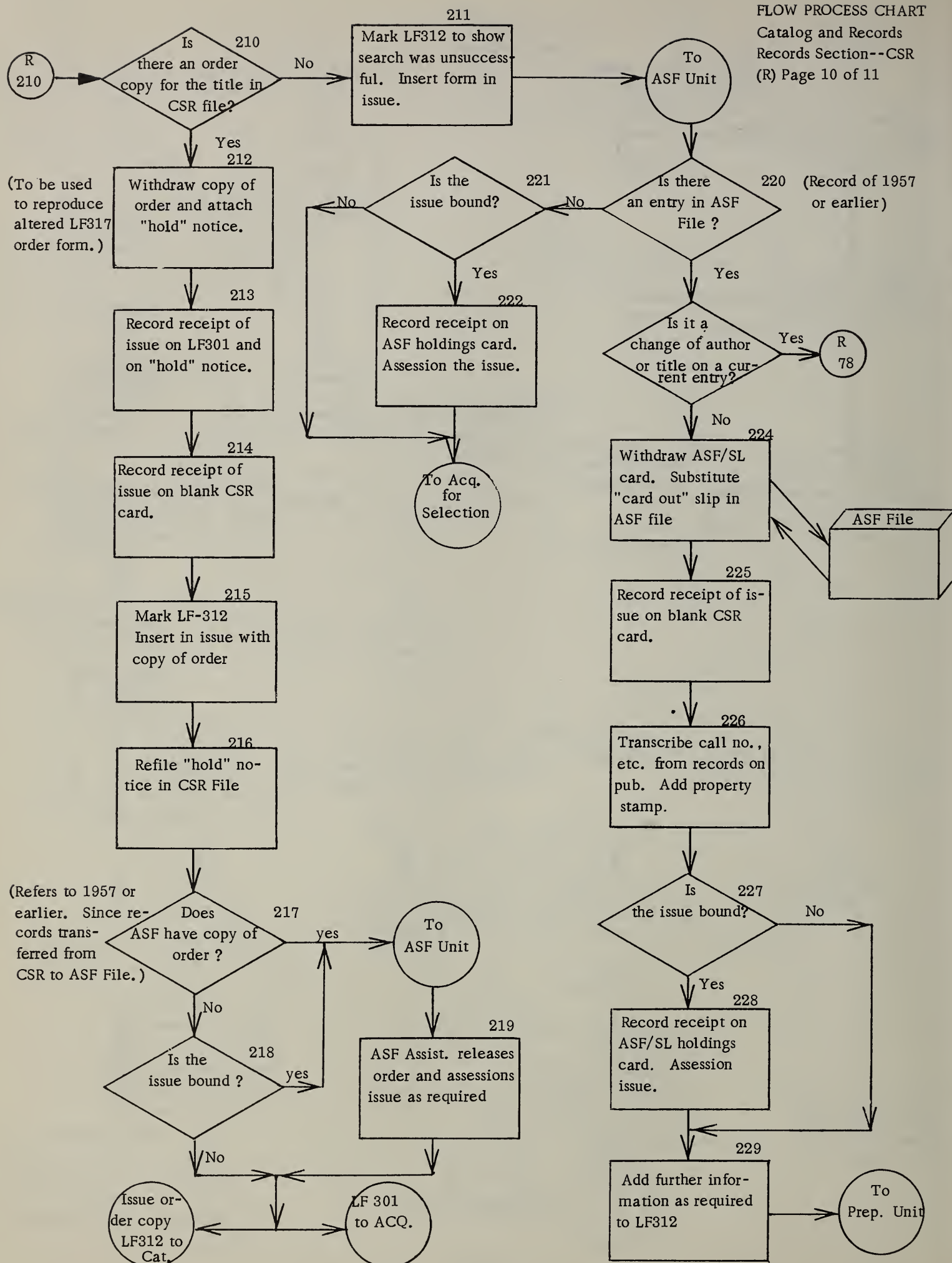




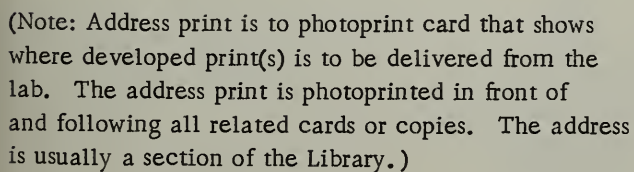
FLOW PROCESS CHART  
Catalog and Records  
Records Section--CSR  
(R) Page 8 of 11







(R) Page 11 of 11 (Gift Exchange)



T E C H N I C A L   S E R V I C E S

DIVISION OF CATALOG AND RECORDS

Records Section

(see also CSR unit   preceeding pages)

Flow Process Charts

5 pages

Blocks coded S 1 - S 100

-

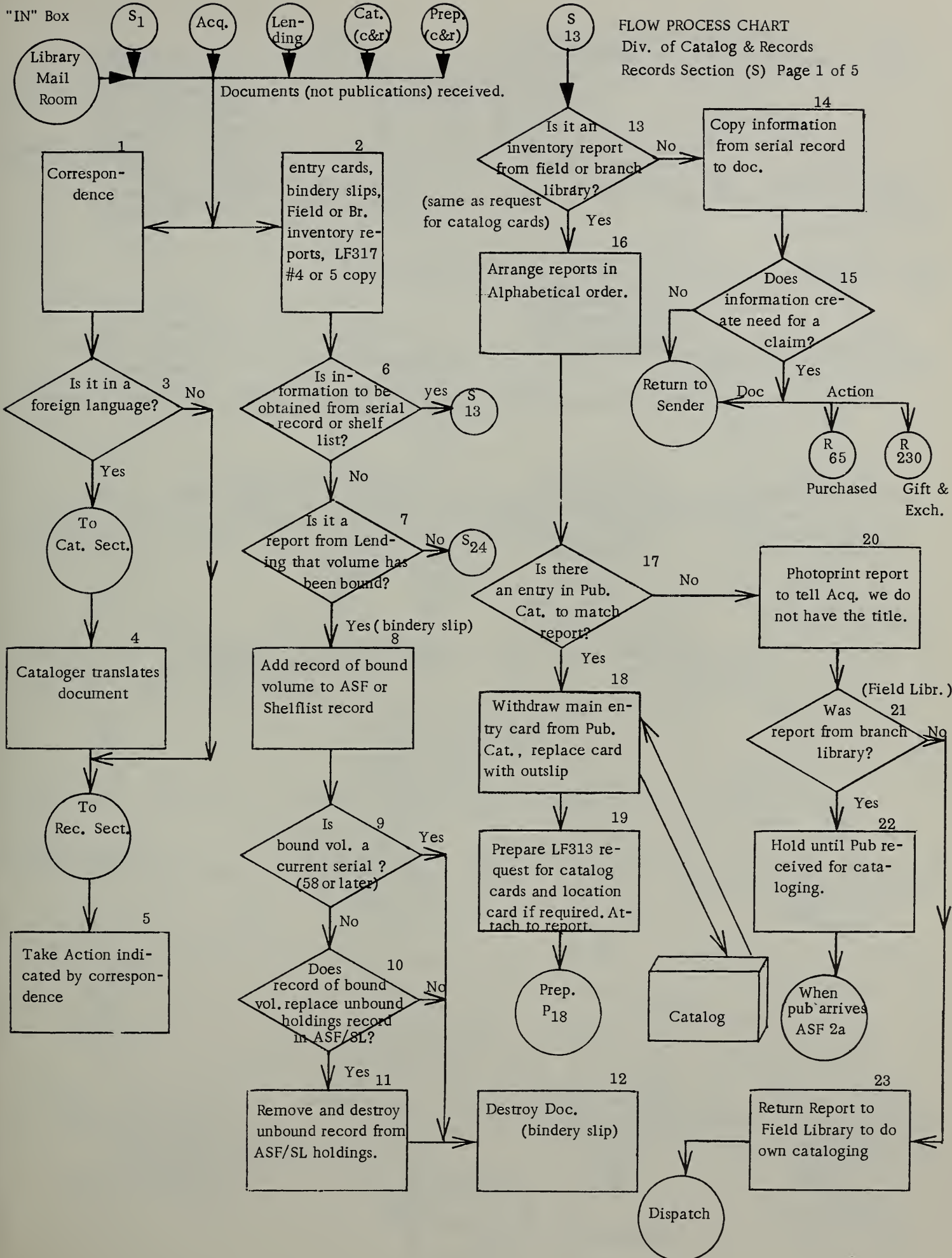
Preparations Section

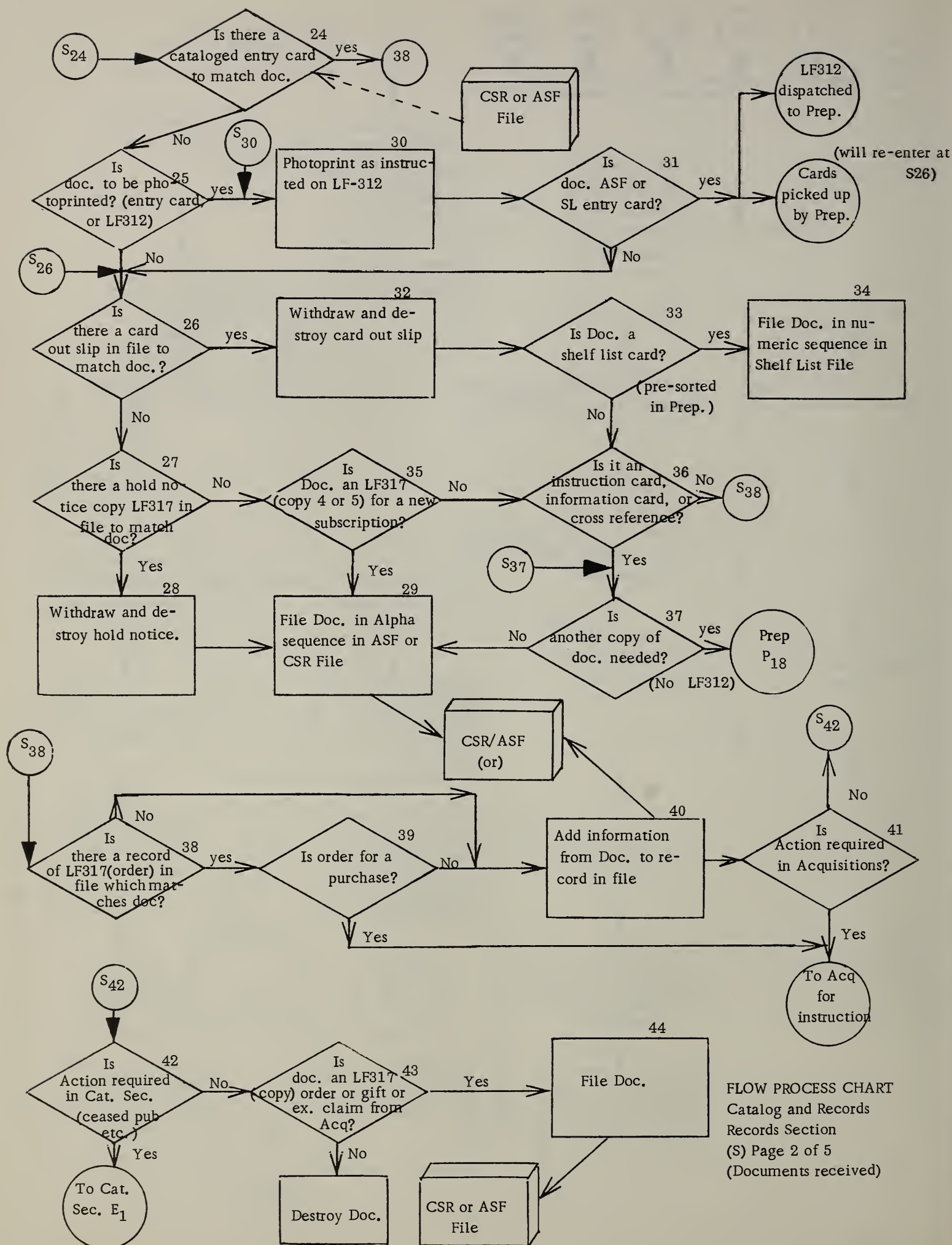
Flow Process Charts

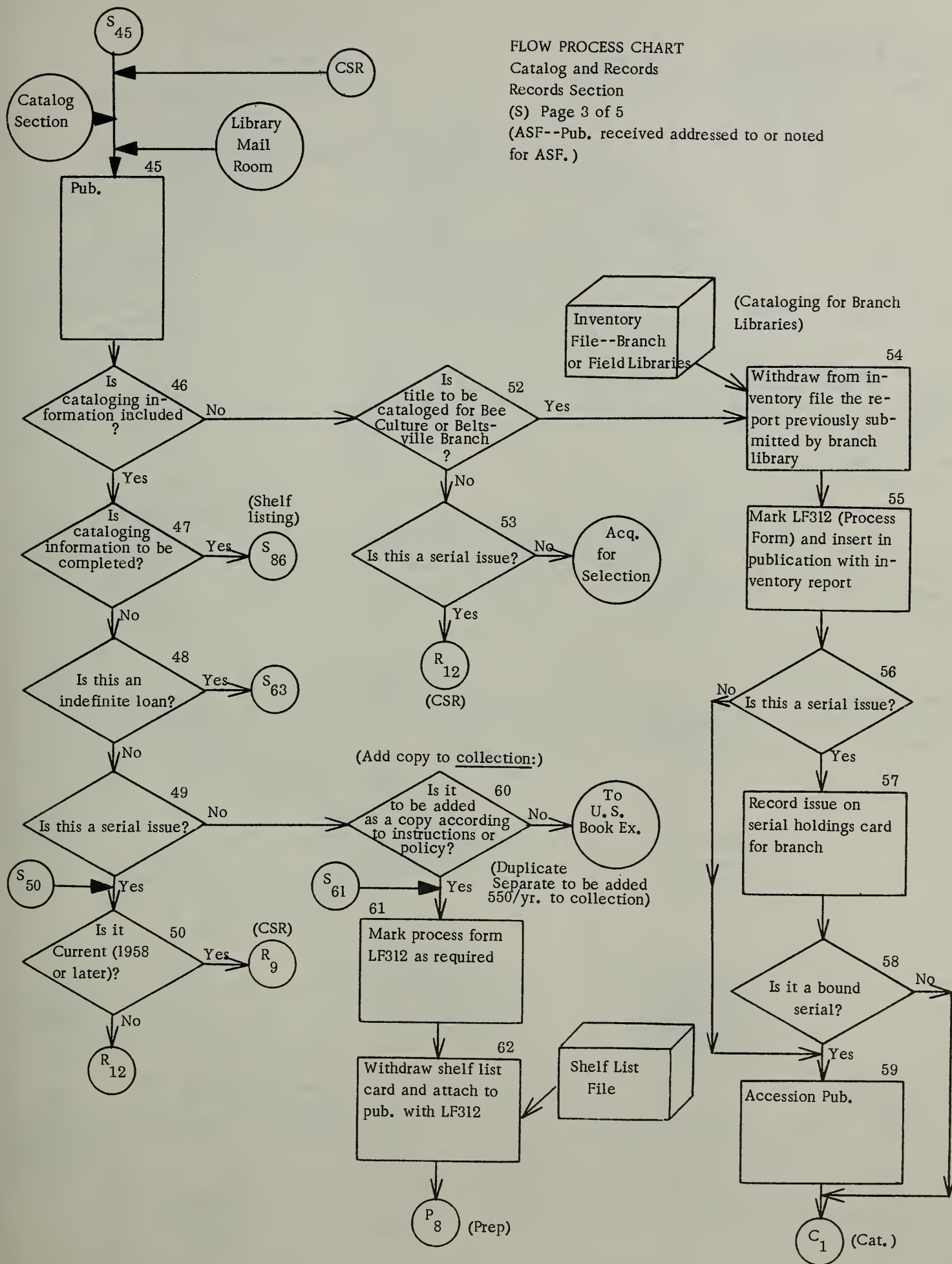
2 pages

Blocks coded P 1 - P 29









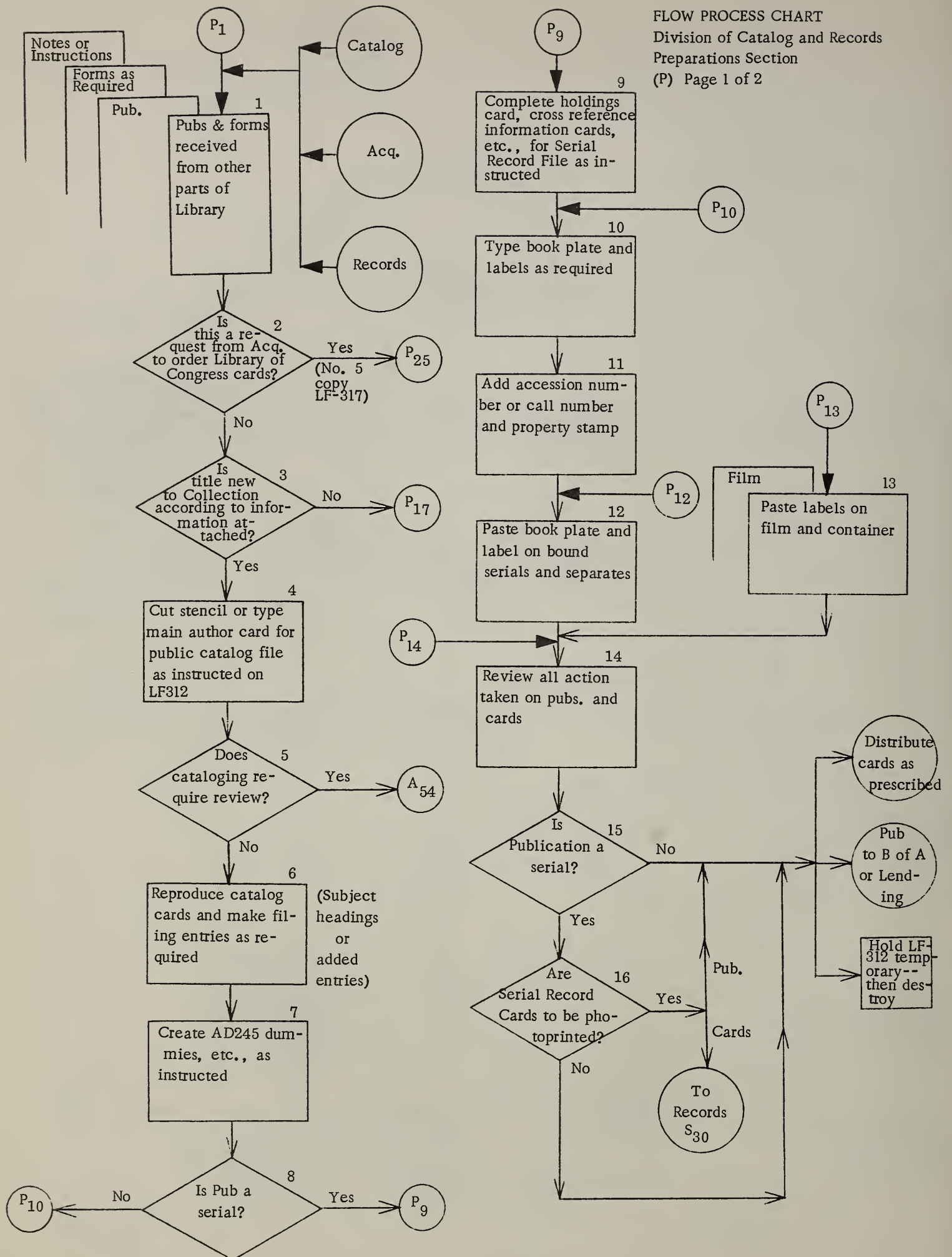




(ASF-- Shelf listing)

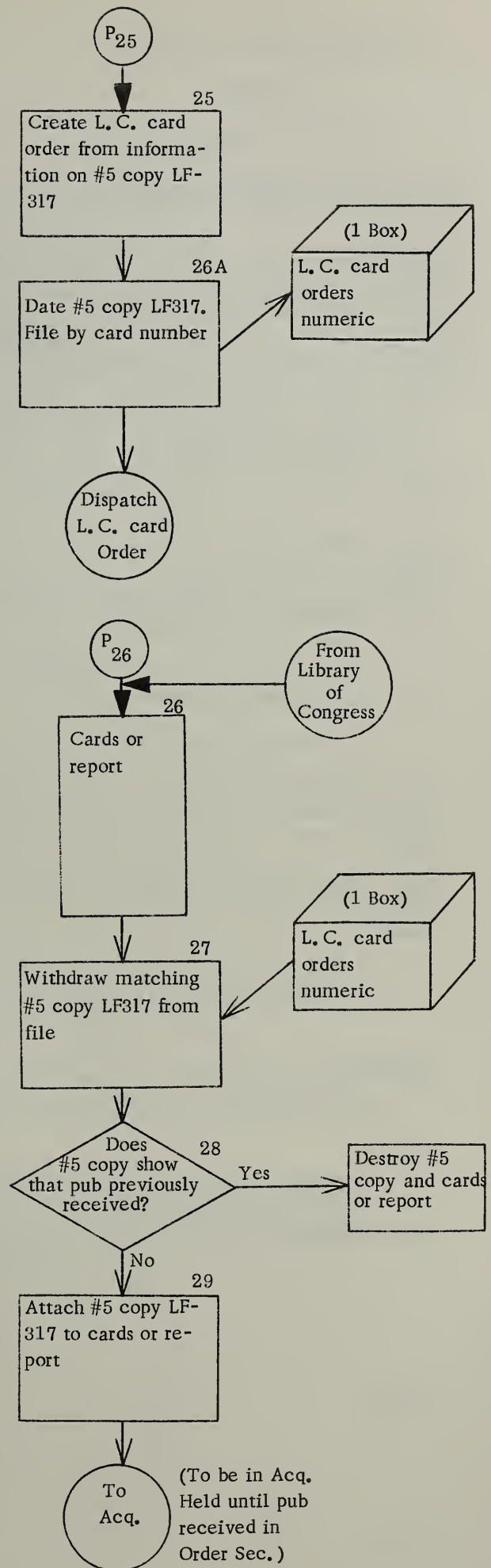
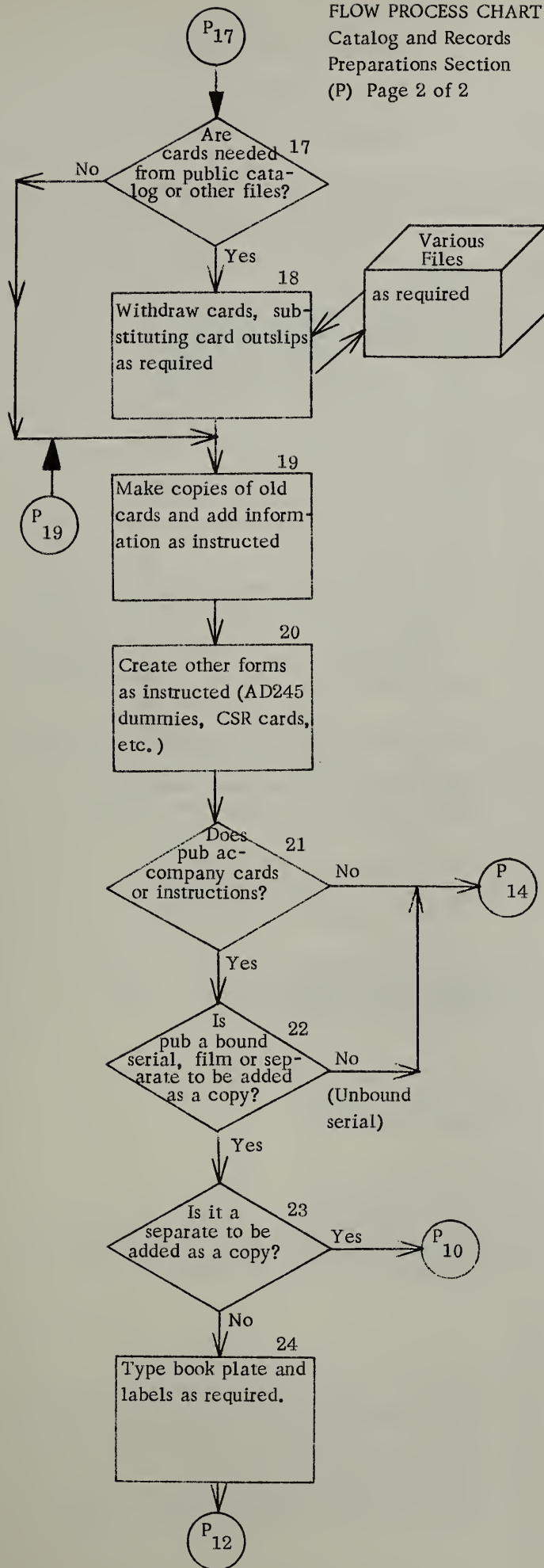


FLOW PROCESS CHART  
Division of Catalog and Records  
Preparations Section  
(P) Page 1 of 2





FLOW PROCESS CHART  
Catalog and Records  
Preparations Section  
(P) Page 2 of 2



ACQUISITIONS OR  
CATALOG AND RECORDS  
FORMS

Process Form LF-312

LF-312 (10-60) PROCESS FORM Date \_\_\_\_\_  
Initials: \_\_\_\_\_

1.Route to:ACQ \_\_\_\_\_ CSR \_\_\_\_\_ ASF \_\_\_\_\_ PREP \_\_\_\_\_ CAT \_\_\_\_\_ INV \_\_\_\_\_

2.Sep \_\_\_\_\_ New \_\_\_\_\_ Copy \_\_\_\_\_ Trans \_\_\_\_\_ Addr \_\_\_\_\_ Anal \_\_\_\_\_  
Ser \_\_\_\_\_ Form \_\_\_\_\_ Poster \_\_\_\_\_ Catalog \_\_\_\_\_

3.Selected by \_\_\_\_\_ Not kept \_\_\_\_\_ Bl.ord \_\_\_\_\_

4.Search:CSR \_\_\_\_\_ ASF \_\_\_\_\_ Cat. 0 LC \_\_\_\_\_ Other \_\_\_\_\_  
File \_\_\_\_\_  
Class sep \_\_\_\_\_ Only nos. of interest kept \_\_\_\_\_  
No. lacking CSR \_\_\_\_\_ Claimed \_\_\_\_\_ Ser ord \_\_\_\_\_  
Return to cat. with ASF \_\_\_\_\_ sl \_\_\_\_\_ card \_\_\_\_\_

5.Call \_\_\_\_\_ Other \_\_\_\_\_  
no: \_\_\_\_\_ ed: \_\_\_\_\_

6.Type \_\_\_\_\_ Sten \_\_\_\_\_ cds. \_\_\_\_\_ Type ms \_\_\_\_\_  
Hanging \_\_\_\_\_ reg. \_\_\_\_\_ indention \_\_\_\_\_ Cong. \_\_\_\_\_  
Auth: As on pub \_\_\_\_\_ ord \_\_\_\_\_ Dates \_\_\_\_\_  
Auth. as follows: \_\_\_\_\_

Title: As on pub \_\_\_\_\_ As follows: \_\_\_\_\_

Ed. \_\_\_\_\_  
Hold.st. \_\_\_\_\_  
Place \_\_\_\_\_  
Publ: \_\_\_\_\_  
Date \_\_\_\_\_  
Coll \_\_\_\_\_  
Notes: \_\_\_\_\_

Subjects: \_\_\_\_\_

Added entries: \_\_\_\_\_

X-refs: \_\_\_\_\_

OVER \_\_\_\_\_

7.Cd for EE \_\_\_\_\_ PAU \_\_\_\_\_ NST \_\_\_\_\_ ACQ \_\_\_\_\_ BIBL \_\_\_\_\_ Other \_\_\_\_\_  
Photo for BIBL \_\_\_\_\_ NST \_\_\_\_\_ ACQ \_\_\_\_\_ ORIENT \_\_\_\_\_ CSR \_\_\_\_\_  
Call no.change slip from \_\_\_\_\_  
to \_\_\_\_\_

Discard \_\_\_\_\_ change \_\_\_\_\_ old cds & out slips; leave  
out slip in sl for \_\_\_\_\_  
Bind.slip \_\_\_\_\_ Dummy \_\_\_\_\_ Env. \_\_\_\_\_ Bookpl. & label \_\_\_\_\_  
Remove \_\_\_\_\_ Add \_\_\_\_\_ accession nos. \_\_\_\_\_  
Stamp cop. 1 RESERVE \_\_\_\_\_ Cut pages \_\_\_\_\_ Mend \_\_\_\_\_  
Staple \_\_\_\_\_ Insert loose pages \_\_\_\_\_ Pocket \_\_\_\_\_  
Add call no. & prop. stamp to pubs \_\_\_\_\_

8.Purch \_\_\_\_\_ Bl.ord \_\_\_\_\_ Bind \_\_\_\_\_ Circ \_\_\_\_\_  
Freq:bi-a,a,s-a,q,bi-m,m,s-m,bi-w,w,s-w,d,ir \_\_\_\_\_  
Make following yrs current \_\_\_\_\_  
CSR claim from \_\_\_\_\_

Note on CSR cd \_\_\_\_\_

Work-in-parts \_\_\_\_\_ Complete in \_\_\_\_\_  
File \_\_\_\_\_  
Send RESERVE \_\_\_\_\_ Cop.1 \_\_\_\_\_ to cat. for anal. \_\_\_\_\_  
Stamp \_\_\_\_\_ Remove \_\_\_\_\_ For nos. in Lib.see Shelflist. \_\_\_\_\_  
\_\_\_\_\_ Only latest ed.kept. \_\_\_\_\_  
\_\_\_\_\_ Only current nos.kept. \_\_\_\_\_  
\_\_\_\_\_ For nos.in Lib.consult shelves. \_\_\_\_\_  
\_\_\_\_\_ In prog.addit.on main cd. \_\_\_\_\_

Change coll.& impr.as indicated on \_\_\_\_\_  
Make added entry for Cat.& ASF, trace: \_\_\_\_\_

Make auth.entry (& added ent.) for ASF \_\_\_\_\_  
Type shelf \_\_\_\_\_ Circulation \_\_\_\_\_ card. \_\_\_\_\_  
Change of auth.entry: \_\_\_\_\_

Change of title: \_\_\_\_\_

Ceased \_\_\_\_\_ Suspended \_\_\_\_\_ Suppl \_\_\_\_\_ Numbering \_\_\_\_\_  
Make x-ref. from cat.entry \_\_\_\_\_ following \_\_\_\_\_ to  
CSR entry as above \_\_\_\_\_ as cat. \_\_\_\_\_:

Copy hist. \_\_\_\_\_ inf. \_\_\_\_\_ cd for \_\_\_\_\_  
Change \_\_\_\_\_ note on \_\_\_\_\_ cd. \_\_\_\_\_  
to match note on \_\_\_\_\_ cd. \_\_\_\_\_  
Copy \_\_\_\_\_ note on \_\_\_\_\_ cd.on to \_\_\_\_\_ cd. \_\_\_\_\_  
Transfer hold.from \_\_\_\_\_  
to new hold.cd. \_\_\_\_\_  
Recall all issues and change call nos. \_\_\_\_\_

OVER \_\_\_\_\_

## CATALOG AND RECORDS

## FORMS

L F - 301

## Serial Issues Receipt

LF-301(3/62) . SERIAL ISSUES RECEIPT	
Ord. _____ B&F _____	Order no. _____
Entry: _____	
CSR recd.:	ASF recd.:
Br. Lib. recd.:	Recd. complete _____
	Ann. Follow-Up Yr. _____
	Initials _____
	Date _____
Noted in Order Sect. by: _____ Date _____	

This form is created in Records and sent to Acquisition. It is not used for a single issue pub. It has 3 unique uses:

1. To notify Acquisitions that the last piece due on a subscription has been received (last piece may be an index issue).
2. Receipt a claim -- serves as a notice that an issue that has been claimed by Acquisitions has been received.
3. To notify Acquisitions that an issue was received but #4 copy of order form LF 317 will remain in CSR file until first issue on the order is received.



CATALOG AND RECORDS  
FORMS

Indefinite Loan

ITEM

CLASS	PROPERTY NUMBER
ACQ. DOC. NO.	RECEIPT DATE
APPROPRIATION	
VOU. NO.	DATE
COST	
\$	

AD - 106

Indefinite Loan  
Charge Slip

(also used when  
discharged)

Carbon copies  
attached:

Yellow  
Pink  
Blue

ON CHARGE TO:	

U.S. DEPT. OF AGRICULTURE  
100 PROPERTY RECORD 11-50

★ U.S. GOVERNMENT PRINTING OFFICE: 1948-544116

U.S. DEPT. OF AGRICULTURE LIBRARY

INDEFINITE LOAN ROUTING FORM

( ) To: Preparations, C&R  
( ) Type Dummy:

( ) To: Bibliography Division, Library

Sent for your information. Please forward  
to Agency-Library Liaison Officer, RUSH

Indefinite Loan  
Routing Form

( ) To:  
Agency-Library Liaison Officer

( ) Indefinite Loan for:

( ) Agency Book for:

( ) This is the second copy of this  
publication received in the Library,  
and it is sent to you as an Agency  
Book. Please return the first copy  
which was charged as an Indefinite  
Loan to:

with your agency copies of the AD-106  
form to:

Library  
Catalog & Records Section (ASF)

## Serial Claim Notice

LF 316-Claim  
used as a mask  
over CSR checking  
card shown below

16-74233-2 GPO

[illegible]

C S  
BIND  
FREQ

[illegible]

309

ACQUISITIONSClaiming

Claims initiated by signals according to a schedule  
-----

When the LF 317 Order (original) for a serial is filed in numeric order in the Outstanding Order File (OOF) a colored clip is attached to LF-317. The clip indicates when a periodical must be claimed on a regular basis. The following table shows the location of the clip, the color of the clip, the Claim date, the origin, whether Foreign or Domestic, and the frequency that it is published.

<u>LOCATION</u>	<u>COLOR</u>	<u>CLAIM DATE</u>	<u>ORIGIN</u>	<u>FREQUENCY</u>
Left	Orange	Feb. 1 (every 2 weeks thereafter)	Domestic	Daily Semi-weekly Weekly
Left center	Blue	Feb. 15 (every 2 weeks thereafter)	Domestic	Bi-weekly Semi-monthly Monthly
			Foreign	Daily Semi-weekly Weekly
Center	Green	Mar. 15 (every month thereafter)	Foreign	Bi-weekly Semi-monthly Monthly
Right center	White	Apr. 15 (every month thereafter)	Domestic	Bi-monthly Quarterly
Right	Yellow	May 15 (every month thereafter)	Domestic	Irregular and all others
			Foreign	Bi-monthly Quarterly Irregular and all others
	Red	July 15 Semi-annuals, Annuals	Domestic & Foreign	Semi-annuals Annuals, and all others



## ACQUISITIONS

### Claiming - Gift or Exchange

Claim Mask for unnumbered serials prepared in PSS from information on CSR (Checking record) card photoprint received from CSR.

### Claim an Exchange

GENTLEMEN:

~~MAIL - 1962 DEC 4 1962 DEC 12 1962~~  
The U. S. Department of Agriculture Library is interested in receiving on EXCHANGE the publication listed below. Please add our name to your mailing list and send us the following back issues: *v. 1-3, 5 - date.*

(Cut out)

Please address correspondence and publications concerning this request to:

Library, Current Serial Record (E)  
U. S. Department of Agriculture  
Washington 25, D. C.

A list of publications available for exchange will be furnished upon request.

E

16-73285-1 GPO

### Claim a Gift

GENTLEMEN:

*Stamp date of claim*  
*date of 3rd claim*    *date of 2nd claim*  
The U. S. Department of Agriculture Library is interested in receiving the publication listed below. Please add our name to your COMPLIMENTARY MAILING list and send the following back issues: *(enter issue claimed here)*

(Cut out)

Please address correspondence and publications concerning this request to:

Library, Current Serial Record (G)  
U. S. Department of Agriculture  
Washington 25, D. C.

G

16-73286-1 GPO

The photoprints of above masks over CSR record prepared and mailed in Order Section, with mask and photoprint CSR card returned to CSR.

This is the first claim.

Second and third claim is made in CSR using mask that was filed.

No reply to third claim for Gifts results in Form Letter LFL-351 (attached) prepared and mailed in Order Section.

LFL-352 for Exchanges.

		Order # Date
(Searcher's initials & Date)	CAT AOF REC	D Est Ap LC CNo
(Enter Source)		
		LF-317

LF-317 - Original

Order Form made up  
in Acquisition Division

Citation from  
Bibliography is  
photocopied, using  
LF-317

Photocopies of this  
form serve various  
purposes.  
(Each copy is numbered).

Explanation of abbreviations:

CAT Public Catalog  
AOF Alphabetical Order File  
REC Records Section

D Destination of Pub.  
Example - B=Beltsville  
CSR/ASF =Pub. to Records Section

Est Cost  
AP Appropriation Number  
LC Library of Congress - a card order number  
CND Call Number or "Copy"

When pub. is received  
a photocopy of LF-317  
is put into the pub.  
Acq. Div. It stays  
with the pub. until  
the end of the line  
in the Catalog process.  
It is then destroyed.

LF-317 - Prospect  
photocopy of pub.  
cited in biblio-  
graphy or other  
source which has been  
selected as a prospect  
for Acquisitions

## DIVISION OF REFERENCE

Reference Section

The primary function of the Division of Reference is to provide patrons with information about publications, particularly publications in the National Agricultural Library's collection. The Division also assists patrons by recommending publications and furnishing information on specific topics which can be readily obtained from a reference tool or a publication in the Library's collection. Visitors to the Library are assisted by reference tools.

Most patrons are Department employees seeking information about publications which they need in their work, but inquiries about publications and general information requests are also received from other persons and non-Department organizations. These inquiries and requests are received in person, by mail, and by telephone.

There is no definite procedure that can be followed in answering a reference question or in assisting a patron to select a publication which he needs. However, one important function of the Division is to identify publications requested by patrons when the requests do not have call numbers which can be readily obtained. Actually there is no definite procedure followed in attempting to identify a publication, but most requests without call numbers are forwarded to the "telephone desk", a position in the Division of Reference where call numbers are obtained and put on the requests. When a call number cannot be obtained for a publication which apparently should be in the NAL's collection, an attempt is made to identify the publication, that is, to verify the title, author's name or other information. Although there is no definite pattern that is followed in identifying a publication, the processing of publication requests follows a rather definite procedure as explained below and set forth on the attached flow chart. These requests are handled in the Reference Section of the Division. No flow charts have been prepared for the Special Bibliographies and the Nursery and Seed Trade Catalog Section.

Most telephone requests received by the Library are received at the telephone desk where AD-245's are prepared with the appropriate call numbers. Requests received by the Division of Lending by mail and from visitors are also referred to the telephone desk for call numbers when not supplied by the patron. Most call numbers are obtained from either the card catalog or Miscellaneous Publication 765, which contains call numbers for many serial publications in the NAL's collection.

When the call number is obtained the request is sent to the Division of Lending, which is responsible for getting the publication from the collection for the patron and charging it to him. Numerous publication requests from Department personnel and others are processed each day.

It should be noted that although most telephone requests are received at the telephone desk, all reference librarians receive telephone requests. However, the basic procedure is followed and, therefore, the flow chart shows telephone requests as originating at the telephone desk.

Telephone Desk

As indicated above, an AD-245 is prepared at the telephone desk when a telephone request is received. Requests referred from Lending for call numbers are usually on AD-245's. When the call number is obtained, it is put on the AD-245 and sent to Lending. Non-Department personnel cannot take publications from the reading room without special borrowing privileges. Publications are borrowed by many libraries however. When a non-Department request is received at the telephone desk on a form other than an AD-245, an AD-245 is usually not prepared until the call number is obtained.

If a call number is not readily obtained from the card catalog, Miscellaneous Publication 765, or some other handy reference source, a brief attempt is made to identify the publication by consulting basic reference tools such as the Cumulative Book Index, Publishers' Trade List Annual, Books in Print, Reference Catalog of Current Literature, etc. With respect to serial requests, the Union List of Serials or New Serial Titles, which contain a listing of various libraries with the names of periodicals in their collections, are also used. Such a listing may not provide verification of a publication, but may disclose that it is in the NAL's collection.

When the telephone desk has identified a publication, but cannot locate a call number and is satisfied that the publication is not in the collection, a Department request is referred to the reference librarian responsible for borrowing publications from other libraries. Non-Department requests are sent to Lending which informs the patrons that the requested publications are not in the NAL collection.

If the telephone desk does not identify a requested publication, it is referred to a reference librarian for a more thorough attempt to identify the publication.

The present policy of the Division of Reference is to assign a recently hired reference librarian to the telephone desk. This employee handles a variety of reference questions received from visitors and by telephone, and assists visitors to the Library in the use of the card catalog and various reference tools.

Detailed Search

When a request is referred to a reference librarian by the telephone desk, an attempt is made to identify the requested publication by consulting various reference tools. The Bibliography of Agriculture, the Agricultural Index, Chemical Abstracts, Forestry Abstracts, List of Scientific Periodicals and the Readers' Guide to Periodical Literature are a few of the numerous reference tools frequently consulted to identify a requested publication.

When a request from a local employee is referred for identification, he is usually contacted by telephone in order to obtain more information and his source of reference. If it is not identified and the request is from a local employee, he may be contacted again to obtain more information. If further information cannot be supplied by the patron, the request is discarded or returned



to the patron if he wants it. In some instances, local non-Department patrons are also contacted for more information. Otherwise, a notation is put on the request, as is also done with non-local Department requests, asking for more information and the request is sent to Lending which forwards it to the patron.

When a publication is identified the reference librarian gets the call number and puts it on the AD-245 and sends it to Lending. If a call number is not obtained for a Department request, it is referred for borrowing, whereas non-Department requests are sent to Lending to notify the patron that the publication is not in the collection. However, if the reference librarian is of the opinion that the requested publication should be in the Library's collection, the Division of Acquisitions is contacted to find out whether or not the publication is on order. If it is on order, and the request is not a Department request, a notation that it is on order is put on the request before sending it to Lending. If it is a local Department request, the patron is called to find out whether or not he wants it reserved or borrowed. If he wants it reserved, it is sent to the Division of Acquisitions. If he wants it borrowed, it is referred to the reference librarian responsible for borrowing. If he doesn't want the publication reserved or borrowed, the request is discarded or returned to the patron. If the Department request for the publication on order is not a local request, the publication is automatically reserved and the request is sent to the Division of Acquisitions. The out-of-town Department patron is then notified of the delay by mail and advised that the publication will be borrowed from another library if so desired.

If the publication is not on order, the reference librarian may recommend that it be obtained for the collection. If no such recommendation is made, a delay notice is sent to out-of-town Department patrons and action will be taken to borrow the publication. If the request is from a local Department patron, he will be called to find out whether or not he wants the publication borrowed from another library. If he does not, the AD-245 is discarded or returned to him if he wants it. If he wants it borrowed, action is then taken to borrow it. Non-Department requests are sent to Lending to advise the patron by mail, or otherwise, that the publication is not in the collection.

When a reference librarian recommends that the publication be obtained for the NAL's collection, an order form (U. S. D. A. Lib. 61) is prepared which must be approved by the Chief of the Division of Reference. If he approves the recommendation, a delay notice is sent to an out-of-town Department patron advising that there will be a delay, and that the publication is being ordered and will be reserved for him, but that if he so desires it will be borrowed from another library if requested. The AD-245 and the order form are then forwarded to Acquisitions. If the request is from a local Department patron, he is contacted by telephone and advised that the publication is on order and will be sent to him when received, if he still wants it. If he wants it reserved, the AD-245 and the order are sent to Acquisitions. If he doesn't want it reserved, the AD-245 is discarded or returned to him, if he wants it, and the order form is sent to Acquisitions. If he wants the publication borrowed, action is taken to borrow the publication, but the order is still sent to Acquisitions. Non-Department requests are sent to Lending as soon as the recommendation to borrow the publication is made so that the patron can be advised that the publication is not available.

If the Chief does not approve the recommendation to obtain the publication, the order form is discarded and the same action is taken as when a publication is not on order, and no recommendation is made to obtain the publication for NAL's collection.

#### Borrowing From Other Libraries for Department Patrons

Before summarizing the borrowing procedure, it should be observed that one particular reference librarian is responsible for initiating action to borrow publications. Thus, when another reference librarian has a request for a publication which must be borrowed, that librarian forwards the request to the librarian responsible for borrowing the publication. Of course, if the latter librarian is working on a publication request, trying to identify it, etc., and determines that it must be borrowed, then she simply follows through with the borrowing procedure.

It should also be noted that when a publication request is referred from the telephone desk to the reference librarian responsible for borrowing publications, that librarian may check with Acquisitions to find out whether or not the publication is on order and if it is not, she may recommend purchase of the publication before attempting to borrow the publication. The procedure followed in those instances is as described above. Publications are only borrowed if they are to be used for official business.

The borrowing procedure is flexible, but a rather definite procedure as set forth on the attached flow chart is normally undertaken with respect to most publications that must be borrowed for Department patrons. However, the Division of Lending performs some borrowing functions which are not detailed on the flow chart and, therefore, the attached flow chart for the Division of Reference merely reflects the decisions to be made by that Division when an attempt is made to borrow a publication. The flow chart for the Division of Lending sets forth the joint operations of Reference and Lending and for this reason that flow chart presents a better over-all analysis of the borrowing procedure. (See pages 23-28 of the flow chart for Lending.)

With the exception of foreign medical publications and other instances in which no generalization can be made, an attempt is usually first made to borrow a publication from the Library of Congress. Foreign medical publications are borrowed from the National Library of Medicine with photocopies of serials being furnished in lieu of the actual publications. The action taken in attempting to borrow publications from the National Library of Medicine is described on the flow chart. If a publication cannot be borrowed from that library, usually no further attempt is made to borrow the publication.

In order to borrow a publication from the Library of Congress, a personal visit is made by another reference librarian in order to search through the various card catalogs to obtain the Library of Congress call numbers and submit the requests personally for the desired publications. On some occasions the Library of Congress card catalogs are consulted to identify a publication not previously identified. Various detailed operations are carried out by the reference librarian assigned to borrowing publications from the Library of Congress, but since these operations are extremely varied and are not conducted in the National Agricultural Library, these procedures are not shown on the flow chart. That reference librarian spends about one-half of his time on his visits to the Library of Congress, most of which time is spent searching through the various card catalogs located throughout that Library. When



he returns from the Library of Congress, he gives the AD-245's to the reference librarian responsible for processing the borrowing of publications. They are separated into two groups: one which contains those requests for publications which have been borrowed from the Library of Congress; and the other group which contains requests for publications which he has been unable to borrow from the Library of Congress. The requests for publications which have been borrowed from the Library of Congress are handled as reflected on the flow chart.

When publications requested from the Beltsville Branch Library or agency field libraries have not been borrowed from the Library of Congress, no attempt is made to borrow these publications from other libraries, although another attempt may be made to borrow from the Library of Congress publications requested by agency field libraries. Such requests from Beltsville are returned as are those from agency field libraries by Reference, but on the backs of the latter requests there are listed names of other libraries from which the publication might be borrowed by the agency field libraries. (Usually the telephone desk has already listed such sources with respect to serial requests before referring them for borrowing.)

When Lending receives the other Department requests from Reference for publications that have not been borrowed from the Library of Congress, it attempts to borrow the publications from the sources listed on the back of the requests. When Lending borrows a publication, it sends the publication to the patron and prepares a charge for the publication which is filed in an inter-library loan charge file. When Lending has unsuccessfully attempted to borrow a publication from the local sources listed on the back of an AD-245, it may return the request to Reference before trying to borrow it from out-of-town sources. Reference may want to try again to borrow the publication from the Library of Congress after some or all local sources have been exhausted. This is usually indicated by a notation listed on the back of the request by Reference. If the request is from a local employee, Reference will contact him before trying to borrow it again from the Library of Congress or putting additional sources on the back of the request. If the patron no longer wants the publication, the request is discarded or returned to the patron, if he wants it.

When Lending has exhausted all sources listed on the request and there is no notation to refer it to Reference, Lending may try to borrow from other sources not listed on requests. Other wise, if the request is from a local employee, Lending will contact the patron advising that the publication cannot be borrowed and then discard or return the AD-245 to the patron. However, if one or more out-of-town libraries has advised that it will furnish only a photocopy if a requested serial, the patron will be so advised so that the patron's agency can purchase the copy if it so desires.

It is more difficult to borrow publications from local libraries for out-of-town patrons, but serial publications are usually photocopied by Lending, which sends the photocopy to the borrower and returns the publication to the library from which borrowed. However, this procedure is not unusual because photocopies in lieu of serial publications are generally sent to out-of-town employees even when the publication is in the NAL's collection.

#### Division of Reference Statistics - September 1962

	August		September	
	Questions	Working Days	Questions	Working Days
Reference Room, Telephone Reference and Spec. Bib. Unit				
1961	5,364	23	5,016	21
1962	5,721	23	5,445	19
Bee Culture Branch				
1961	59		73	
1962	29		44	
Beltsville Branch				
1961	1,456		1,497	
1962	1,638		1,382	
Law Branch				
1961	1,365		1,274	
1962	1,418		1,382	
Grand Total				
1961	8,237		6,908	
1962	8,836		8,402	

#### Reference Room, Telephone Reference and Special Bibliography Unit

Total number of working hours - 1,632  
Total number of working hours leave 289  
Man hours worked 1,343 or 82 percent

Questions Recorded

Reference Room and Special Bibliography Unit

Assistant	Sept. 7	Sept. 14	Sept. 21	Sept. 28	Total
C	88	74	132	179	473
F	179	176	92	185	632
M	44	58	125	93	320
R	65	85	79	68	297
S	22	38	57	59	176
L	3	10	14	4	78
S				78	78
Total	401	441	499	666	2,007

Telephone Reference

Assistant	Sept. 7	Sept. 14	Sept. 21	Sept. 28	Total
C			296	426	722
G	469				469
R		77			77
S	337	594	595	424	1,950
V		51	111	58	220
Total	806	722	1,002	903	3,438

Questions Divided by Type

- Type I - request for a specific book
- Type II - general question requiring use of library reference material
- Type III - search question - due to complex nature requires investigation taking over 30 min.

Reference Room and Special Bibliography Unit

Assistant	Type I	Type II	Type III	Total
C	248	217	8	473
F	354	262	16	632
M	210	98	12	320
R	151	125	21	297
S	118	58	0	176
L	4	19	8	31
S	50	28	0	78
Total	1,135	807	65	2,007

Questions Divided by Source

Assistant	Dept. of Agr.	Federal Gov't.	Other	Total
C	360	39	74	473
F	508	99	25	632
M	273	8	39	320
R	173	30	94	297
S	126	9	41	176
L	10	1	20	31
S	47		31	78
Total	1,497	186	324	2,007

Recheck of Library of Congress

Assistant	Sept. 7	Sept. 14	Sept. 21	Sept. 28	Total
M	166	157	179	149	651



Questions Divided by Source

**BELTSVILLE BRANCH**

Assistant	Dept. of Agr.	Federal Gov't.	Other	Total
A	300	9	5	314
B	721	2	2	725
H	240			240
J	238	14		252
Total	1,499	25	7	1,531

Questions Divided by Type

**LAW BRANCH**

Assistant	Type I	Type II	Type III	Total
J	191	9	0	200
R	585	143	52	780
S	195	65	54	314
W	88	0	0	88
Total	1,059	217	106	1,382

Questions Divided by Source

Assistant	Dept. of Agr.	Federal Gov't.	Other	Total
J	199	0	1	200
R	749	25	6	780
S	311	1	2	314
W	88	0	0	88
Total	1,347	26	9	1,382

Miscellaneous Data

	<u>1961-1962</u>	<u>1961-1962</u>
Letters Handled	101 104	85 73
Letters Written	72 72	55 67
Letters (from)Written	0 13	7 8
Interlibrary Loan Requests	170 1,118	610 871

Bibliographies in Progress

Contract Farming and Vertical Integration  
 School Lunches  
 Freeze Drying  
 Library Lists 1, 18, and 25 are being revised

Slip Bibliographies Completed

Control of Insect Infestation in Freight Cars (72 items)    Beltsville Branch, Comp.  
 Fumigation of Peanuts in Storage (58 items)    Beltsville Branch, Comp.

Bibliographies Distributed

Bibliographic Bulletins	3
Library Lists	19
Miscellaneous Publications	5
Total	27

Questions Divided by Type

## Telephone Reference

Assistant	Type I	Type II	Total
C	600	122	722
G	373	96	469
R	65	12	77
S	1, 554	396	1, 950
V	215	5	220
Total	2, 807	613	3, 438

Questions Divided by Source

Assistant	Dept. of Agr.	Federal Gov't.	Other	Total
C	649	57	16	722
G	360	70	39	469
R	32	29	16	77
S	1, 751	129	70	1, 950
V	218	2	0	220
Total	3, 010	287	141	3, 438

Telephone Calls-Incoming

Assistant	Sept. 7	Sept. 14	Sept. 21	Sept. 28	Total
C				177	177
G	217				217
R		15			15
S	254	552	589	390	1, 785
V		49	74	86	209
Total	185	178	193	211	767

Questions Divided by Type

## BEE CULTURE LIBRARY

Assistant	Type I	Type II	Type III	Total
M	33	7	4	44

Questions Divided by Source

Assistant	Dept. of Agr.	Federal Gov't.	Other	Total
M	42	0	2	44

Questions Divided by Type

## BELTSVILLE BRANCH

Assistant	Type I	Type II	Type III	Total
A	201	106	7	314
B	513	207	5	725
H	216	24		240
J	224	28		252
Total	1, 154	365	12	1, 531

P U B L I C   S E R V I C E S

DIVISION OF REFERENCE

MASTER LOGIC FLOW CHART

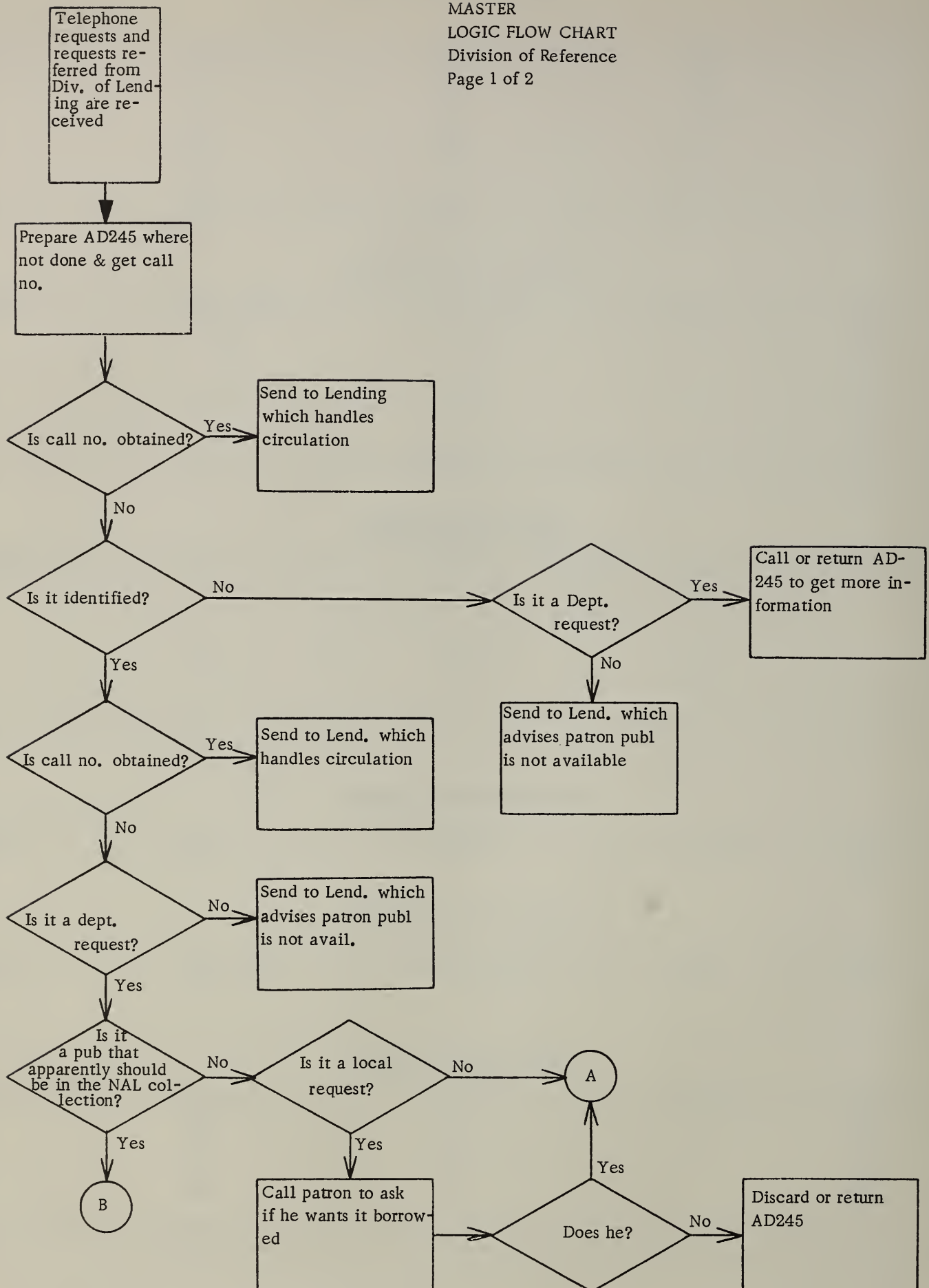
2 pages

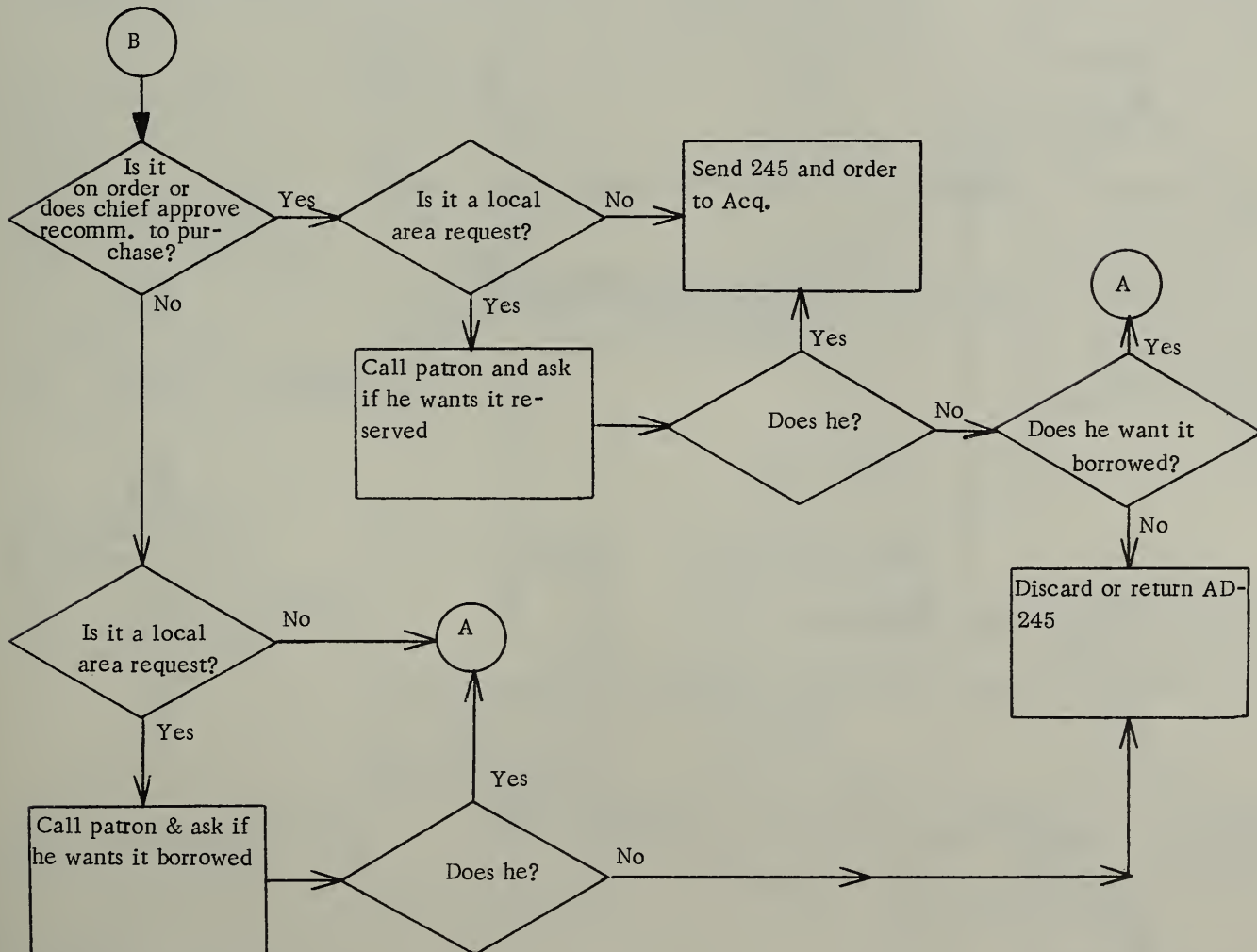
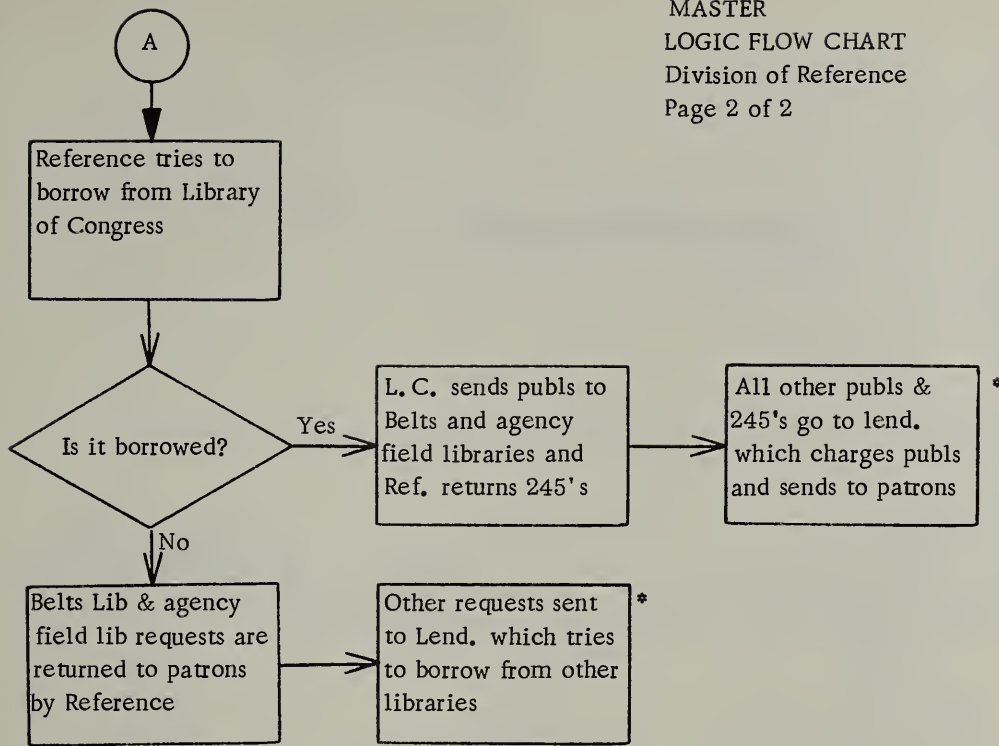
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FLOW PROCESS CHARTS

4 pages





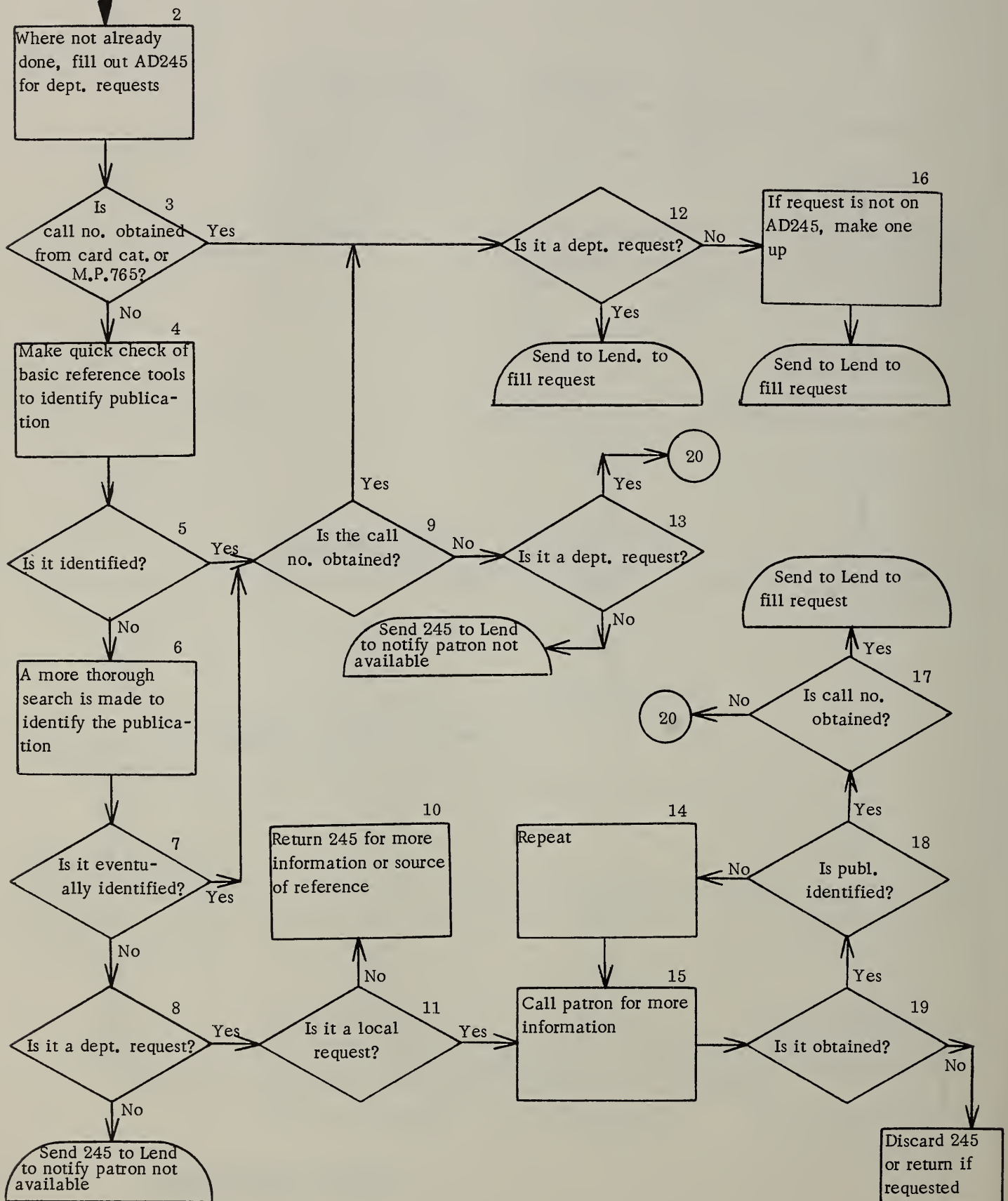


\*See FLOW CHART for Lending

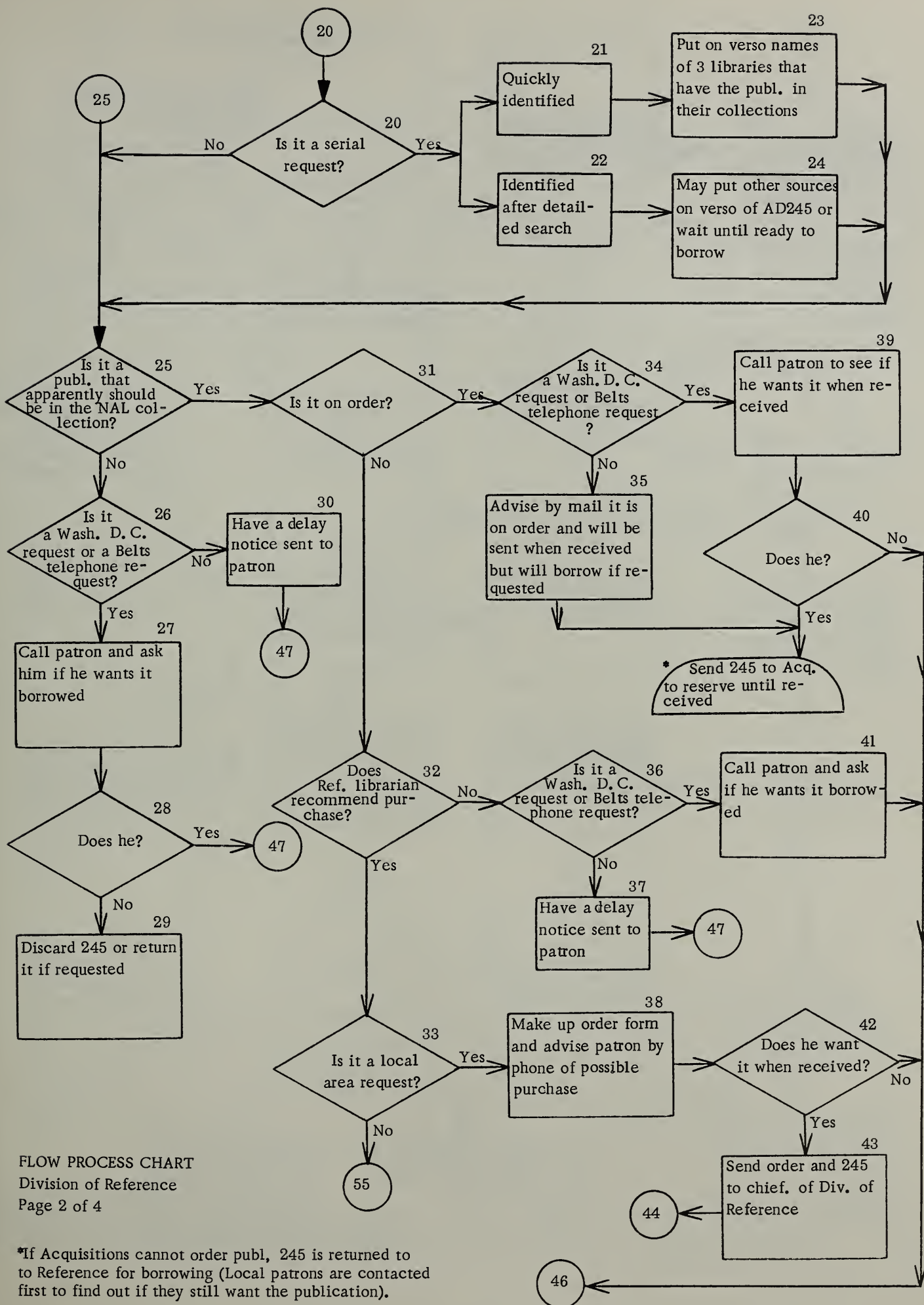
1  
Telephone  
Requests &  
Requests re-  
ferred by Div.  
of Lending  
are received

FLOW PROCESS CHART  
Division of Reference  
Page 1 of 4

Processing of Publication Requests



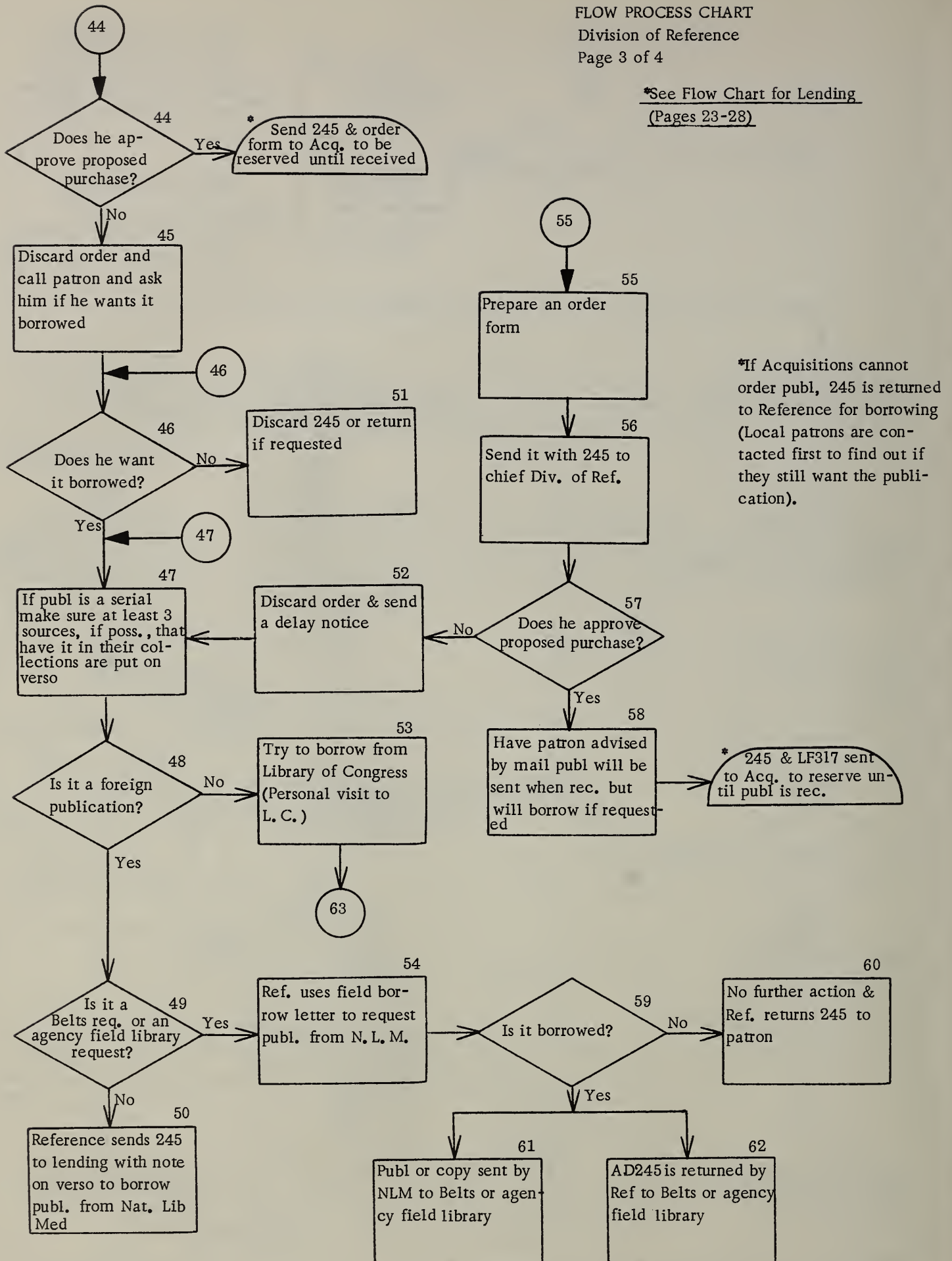


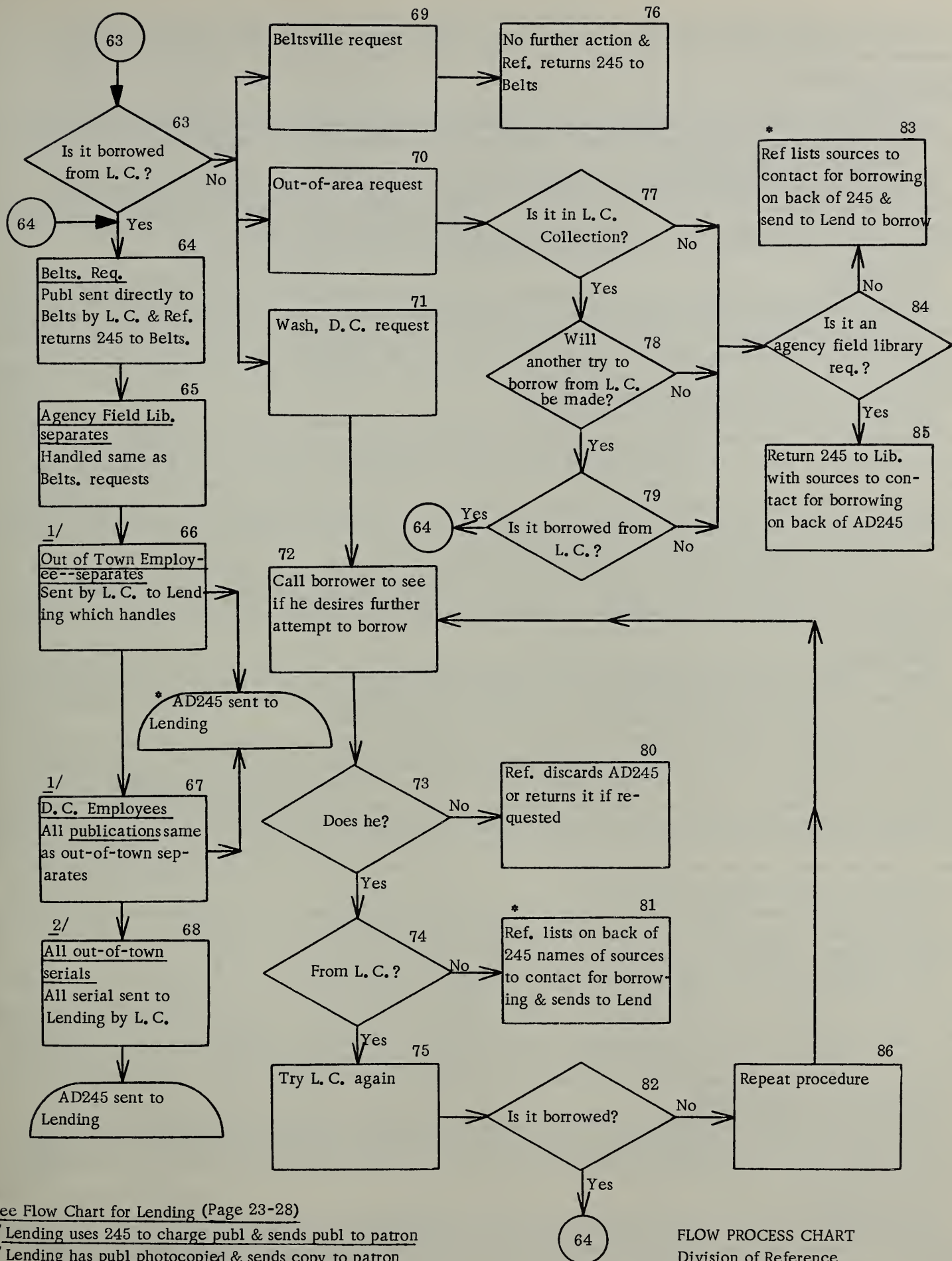


FLOW PROCESS CHART  
Division of Reference  
Page 2 of 4

\*If Acquisitions cannot order publ, 245 is returned to Reference for borrowing (Local patrons are contacted first to find out if they still want the publication).

\*See Flow Chart for Lending  
(Pages 23-28)





FLOW PROCESS CHART  
Division of Reference  
Page 4 of 4



## DIVISION OF LENDING

The attached flow charts reflect in detail the procedures followed by the Loan Section of the Division of Lending in obtaining a publication for a patron and by the Photoduplication Section of the same Division in providing at cost photoprint copies and microfilm of publications.

### LOAN SECTION

Requests for the publications are received by the Loan Section from Department employees, other libraries and various other individuals and organizations. Unless non-Department patrons have special borrowing privileges they are restricted to using publications of the library in the reading room.

Because of some basic differences between the handling of special requests and that of regular requests, the flow chart for regular and special requests is divided into two parts. Pages 1 through 4 pertain to special requests and pages 5 through 10 to regular requests. There is also attached a separate flow for requests received from other libraries as well as another flow chart which shows the procedure followed in the handling of new publications received in the Division of Lending.

#### Special Requests

A special request is usually one that is received either from a patron who is waiting in the Library for the publication, or from a patron who has submitted his request by telephone and wants to be telephoned as soon as the publication is available. Since these requests should be filled within 5 or 10 minutes, a control chart, known as the "window sheet", is used to keep track of all special requests. When a special request is sent to a deck for the publication, the time is entered on the window sheet. As soon as the publication is made available or the patron is notified that it is not available, an appropriate notation is made on the window sheet indicating that as a "special" the request has been completed.

If further action must be taken to process the request, it is thereafter treated as a regular request. If the requested publication is charged out, it may be reserved if the request is submitted by a Department patron, and it is handled as a regular request. Non-Department patrons are advised to submit the request at a later date if the publication is charged out. If a search must be undertaken to locate the publication, a Department employee is advised that there will be a delay. As a general rule, no search is undertaken for non-Department personnel. Publications are not reserved or borrowed for persons not associated with the Department. The flow chart on pages 1 through 4 reflect the procedure for handling non-Department requests, as well as certain Department requests, because non-Department requests are usually treated as special requests.

If a special request is for a publication shelved in the Annex, the patron is advised of a delay and if he still wants the publication, the request is thereafter handled as a regular request. Although a search is usually not undertaken for non-Department patrons, the Annex is checked for such patrons and if a subsequent Annex search is required, it may be undertaken for non-Department patrons.

#### Regular Requests

Pages 5 through 10 of the flow chart deal with the handling of regular requests. It should be noted that for the most part the flow chart for special requests is similar to page 5 of the chart dealing with the initial handling of regular requests, except that the chart for specials reflects the procedures used with respect to the window sheet.

If a patron is neither waiting in the Library nor expecting to be telephoned as soon as the publication is available, his request is treated as a regular request together with numerous other such requests and it is not filled immediately as is a special request. The flow chart for regulars does not show how such requests for non-Department patrons are processed because they are generally handled as specials. However, when a non-Department request is treated as a regular, it is handled like a Department request except that instead of borrowing or reserving publications for non-Department patrons, they are advised that the publication is not available. Also, usually no searching is done in connection with those requests. Actually the procedure or steps followed is about the same as taken for specials, except that the request is not handled separately with a view toward getting the publication immediately and no notation for the request is made on the window sheet.

When a publication requested and handled as a regular is not located in one of the decks, the charges are checked and if the publication is charged out, it is reserved, but a local Department patron is contacted first to find out whether or not he wants the publication reserved. Otherwise, it is automatically reserved and a delay notice is sent to the employee.

If the publication is one which apparently is shelved in the Annex, the Annex will be checked. If the publication is not in the Annex, the request is sent to Catalog and Records to find out whether or not the publication is in the collection. If it is not in the collection, an attempt is made to borrow it from another library if it is for official use. Local employees are usually contacted first to find out whether or not they want it borrowed. If Catalog and Records indicates that the publication is in the collection, an Annex search is conducted to locate the publication. If it is not located, the charges are checked again. If it is not charged out, an attempt is made to borrow the publication. The Annex is not often checked because for the most part only old publications not usually requested are shelved there.

If the publication is not one shelved in the Annex, then when the charges are first checked and no charge for the publication is found, the request is put in the search box so that a search can be made to locate it unless the requested publication is a current or a preceding year serial in which event, the request is sent to the periodical routing unit of the Loan Section to find out whether it is a circulating periodical or not.

#### Periodical Routing

Before describing what happens after a search has been made, a brief description is given here as to what occurs in the periodical routing unit with respect to current or preceding years serials sent to that unit as indicated above. (An explanation of the basic functions of periodical routing is set forth later.) If the periodical is one that circulates and it is in circulation, the notation "spec"



is put on the routing card for the desired periodical. The request is marked "reserve circ.", and it is filed in the reserve file. When an issue in circulation is returned to periodical routing, the "spec" entry is observed disclosing that a pending request for it is in the reserve file.

If the publication circulates, but the routing card shows that it has not been received, the request is sent to Catalog and Records to find out whether it has been received in the Library. If it has been received and it is a present year domestic, or present or preceding year foreign issue, the request is forwarded to Index and Documentation to determine whether that Division has the issue. If it does not, the request is returned to Lending and put in the search box and a search is undertaken to locate the publication.

If Catalog and Records indicates that the issue has not been received by the Library, the request is reserved by Lending if delivery of the publication is anticipated or is to be claimed. If neither delivery is expected nor a claim to be made, the request is not reserved and an attempt will be made to borrow the issue.

If the periodical routing card discloses that the issue has been circulated to all parties and is no longer in circulation, the request is put in the search box. This also occurs if the periodical is one that does not circulate.

#### Procedure Taken After Unsuccessful Search

If, after a search for the publication in various places, it has not been found, the request is sent to Catalog and Records for a holdings check unless this action has already been taken as indicated above in the case of some current periodicals. Requests marked "finished circ" are not sent for a holdings check because the publication requested is obviously in the Library's collection. Requests not sent to Catalog and Records for a holdings check are put in the search box for a second search. If Catalog and Records indicates that a requested publication is in the collection, the request is put in the search box for a second search when it is returned to Lending. However, if the request is for a present year domestic, or a present or preceding year foreign publication, it is first sent to Index and Documentation to find out whether that Division has the publication. If Catalog and Records indicates that the requested publication is not in the collection, it is reserved if delivery is expected or the publication is to be claimed. If delivery is not expected and no claim is to be made, an attempt will be made to borrow the publication.

#### Borrowing

The flow chart shows in detail the charge, reserve, and borrowing procedures, but no descriptive narrative is deemed necessary with respect to these procedures. However, it will be observed that pages 23 through 28, pertaining to the borrowing procedure, include some functions of the Division of Reference. (See flow chart for that Division.) This was done because the procedures followed to borrow a publication from another library are carried out jointly by the Divisions of Lending and Reference.

Briefly, when Lending determines that a publication should be borrowed for an employee-patron, it makes an appropriate notation on the back of the request and sends it to Reference, which usually tries to borrow the publication from the Library of Congress. If it cannot be borrowed from the Library of Congress, other sources from which the publication might be borrowed are listed on the back of the request which is returned by Reference to Lending, which is responsible for trying to borrow the publication from those sources. If Lending successfully borrows the publication, Reference usually has no further functions to perform with respect to the request. Lending is responsible for sending the publication or a copy of it to the patron and contacting him later if he fails to return it.

If efforts to borrow the publication from the sources listed on the AD-245 are unsuccessful, the request is sometimes returned to Reference for additional sources or for another attempt to borrow it from the Library of Congress.

#### Requests for Publications From Other Libraries

The handling of requests received from other libraries is covered by a separate flow chart which is attached. They are processed much like special requests received from employees and others. A search is usually conducted when necessary, but requested publications are neither reserved nor borrowed.

#### Receipt of New Publications

The procedure followed regarding the receipt of new publications is also set forth on a separate flow chart which is attached. The flow chart shows that such publications are usually shelved except in a few instances, such as when a book has been selected by Reference for the new book shelf in the reading room or when periodicals marked "circ" or "circ copy only" must be handled for routing in the periodical routing unit. The flow chart does not show what occurs when an AD-245 is attached to a new publication. Generally it is sent to the charge desk to be charged and sent to the patron. However, if the publication is a periodical that circulates, periodical routing must list the issue on the routing card before it is sent to the charge desk.

#### The Function of Periodical Routing

Each Agency in the Department has a liaison officer for its contact with the Library regarding periodicals to be routed to its employees. Each November an agency may submit a complete list of the periodicals it wants routed to certain employees. This list can be changed during the year at the request of the agency.

The Food and Drug Administration and other agencies located in the main Department of Agriculture buildings in Washington do not have liaison officers, and the employees of the agencies contact the Library for publication which they want routed to them.

When a request to have a periodical routed is made, it is denied if the answer to one or more of the following questions is affirmative:

- 1) Is it a popular magazine ?
- 2) Are more than 5 persons in an agency to be designated to have a particular periodical routed to them ?
- 3) Can it be obtained for \$2.30 per annum or less ?
- 4) Is it a Russian publication in English translation ?
- 5) Is it a daily periodical ?
- 6) Is it an abstract journal ?



The permanent list of periodicals being routed is kept through the maintenance of two filing systems. One is called the "personnel file", which contains cards for each individual who has one or more periodicals routed to him. The card marked "(1)" is a sample personnel card. When a person or an agency discontinues the routing of a periodical, the card for that person is removed from the file.

The other file is called the "routing file" and it contains two cards for each periodical that circulates. They are kept together in the file and filed numerically by call number. One card is the "master routing card" and the other is the "routing card". The attached card marked "2" is a sample master routing card, and the one marked "3" is a sample routing card. The master routing card lists the names of persons receiving the periodical, arranged by agencies and divisions. Two persons in a division in ARS, for example, are set forth under a particular number. If only one division in an agency has persons receiving a periodical, only the name of the agency need be listed with the names of the persons listed there under. The periodical is first routed to the person or persons under number "1" and they return it when they have no further need of it. Periodical routing then sends it to the persons under "2".

The routing card shows the call number assigned to the periodical. Spaces are provided on the left-hand side of the card, from top to bottom, for listing consecutively each issue of the periodical. To the right of each issue listed there are numbered spaces with the numbers referring to the numbers on the master routing card. Thus, the routing card is designed to show whether a particular person or persons as listed on the master routing card have received the publication and, if so, if they still have or have returned it.

A periodical in circulation is not overdue until each person in a division has had three days to use it. A sample routing card marked "4" is attached.

#### PHOTODUPLICATION SECTION

##### Purchase Copy

Photocopy purchase orders are received for photoprint copies of publications and microfilm. Most requests are received by mail, but some are submitted in person by patrons. Microfilming is charged at the rate of 30 pages for \$1.00, or a fraction thereof, and photoprinting at the rate of 4 pages for \$1.00, or a fraction thereof. For an additional dollar, a purchase order is processed as a rush order. The processing of rush orders is basically the same as the handling of regular purchase orders. The procedure for handling rush orders is not set forth on the attached flow chart for the Photoduplication Section, but following the description of procedure followed in processing regular orders set forth below, is a brief explanation of the procedure followed for handling rush orders.

##### Non-Rush Purchase Orders

These orders can be broken down into three broad categories: (1) Those submitting cash or its equivalent; (2) those submitting NAL coupons in lieu of cash; (3) orders filled for patrons on credit referred to in the flow chart as "to be billed" orders.

Most requests are submitted on purchase order form LF-607 and when an order is received in some other fashion, i.e., letter, memorandum, an LF-607 is prepared for that order. A duplicate order is prepared for "to be billed" orders. One of the first steps taken to process an order is to assign a number to it. The photocopy clerk who initiates the procedure receives these orders from the business office. All cash purchase orders have a remittance register attached to them showing the name and address of the person or organization ordering the copy. The order number assigned to an LF-607 is put on the remittance register by the photocopy clerk.

The photocopy clerk must determine whether the amount submitted (in cash or coupons) is correct or not. If correct, he makes the necessary entries on the photocopy order register, which is a listing of the orders processed, showing the amount submitted, the date when mailed, etc. Other notations are made on the 607 as disclosed by the flow chart and the order is then ready for microfilming. All orders are microfilmed for the purpose of maintaining a permanent record of orders received. After the order is microfilmed, the photocopy clerk gets the call number for the publication, puts it on the 607 and places it in the window messenger box where it is eventually picked up and used by circulation to get the publication from the stacks. It should be noted that many orders are processed together rather than one at a time.

When the publication is obtained by circulation it is sent with the 607 to the laboratory to be photocopied. After the laboratory photopies the publication, it mails the photocopy to the patron and returns the 607 to the photocopy clerk with the date mailed stamped on it. The photocopy clerk then completes the processing of the order as shown on page 37 of the flow chart.

However, if an order is underpaid or overpaid the procedure followed is not the same as explained above. The purchase order must disclose the number of pages to be photocopied so that the photocopy clerk can determine in the case of cash or coupons orders whether the amount submitted is correct or not. If the pagination is missing the photocopy clerk indicates to circulation by putting his initials in the corner of the 607 that when the publication is obtained from the stacks it should be sent directly to him so that he can complete the pagination and determine whether or not the amount submitted is correct.

If the amount is underpaid, the order is cancelled and the procedure shown on page 37 of the flow chart is followed. However, even if the pagination has been given by the patron, the photocopy clerk must have the publication sent to this desk so that he can verify the accuracy of the pagination before cancelling the order.

If the order has been overpaid, a notation "return to" with the photoclerk's initials is put on the 607 which informs the laboratory not to mail the photocopy, but to return it to him. When such a photocopy together with the 607 is sent by the laboratory to the photocopy clerk for completion, the steps set forth on page 36 of the flow chart are taken and a refund in coupons is sent to the patron.

If the photocopy clerk cannot locate a call number, he gives the 607 to the photocopy assistant who is responsible for getting call numbers and attempting to identify publications. No explanation of this procedure is necessary inasmuch as the flow chart shows



the procedure and the flow chart for Reference indicates what is involved in identifying publications. As the attached flow chart shows, the photocopy assistant frequently solicits the assistance of reference librarians when difficulty in identifying publications is encountered.

If the photocopy assistant does not get a call number for an order, the order is returned to the photocopy clerk for cancellation. If it is obtained the photocopy clerk puts the 607 in the window messenger box and the procedure followed thereafter is the same.

However, if the deck attendants cannot locate the publication in the stacks or if the publication is charged out, a notation to the effect is given to the photocopy assistant with the 607. If the publication is charged out, the photocopy assistant gives it to circulation which puts the publication on reserve and recalls the publication. The reserve procedure is not given in detail on the flow chart, because it is set forth in the flow chart for the Loan Section, which handles the circulation of the NAL's publications. When the publication is eventually received, it is given to the photocopy assistant. If the pagination on the order is incomplete, the photocopy assistant completes it, determines in the case of "paid" photocopy orders whether the amount submitted is sufficient. If it is a "to be billed" order, it is sent to the laboratory. If underpaid, the photocopy assistant gives it to the photocopy clerk for cancellation. If it is overpaid, "return to" with the photocopy clerk's initials are put on the 607 to inform the laboratory to send the photocopy to the photocopy clerk and not to mail it to the patron.

#### Orders Submitted In Person by Patrons

Orders received in person are processed essentially like orders except that the procedure of determining whether it is underpaid or overpaid is unnecessary because usually the patron has the publication to be photocopied with him. Moreover, when the patron makes his payment the photocopy clerk makes certain at that time that it is correct. Usually the patron is requested to fill out a 607 if he has not already done so. After receiving payment and the patron given his receipt, the order is processed in the usual manner.

#### Rush Orders

The steps taken to fill a rush order are basically the same as those taken in processing non-rush orders, but the sequence in which they are taken varies considerably. A rush order is not handled with other orders and an attempt is made to process a rush order immediately. The first step usually taken is to get the call number and have an AD-245 prepared which is immediately sent to the stacks to get the publication so that it can be taken personally to the laboratory by the photocopy clerk for photocopying. Regular orders are taken to the laboratory about once a day to have them microfilmed. On those trips he takes with him publications to be photocopied for rush orders. He may have to make a special trip, if he is not scheduled to take the regular orders to the laboratory within a reasonable time. If time permits, he may begin processing a rush order before taking the publication to the laboratory, but most of the processing is done after the publication has been photocopied. Since the primary difference in the processing of rush orders from other orders is in the sequence in which certain acts are performed, and inasmuch as this sequence varies depending upon the circumstances, no flow chart was prepared to reflect the procedures followed in the processing of rush orders.

#### Inquiries

Inquiries received by the photocopy clerk regarding the availability of specific items for photocopy are processed as shown on the attached flow chart under the heading "Inquiries Received, etc."

### Division of Lending Statistics for August 1962

#### LOAN SECTION

Requests (AD-245)	Specials	5,042
	Regulars	<u>5,340</u>
	Total . . . .	10,382
Loans (Pieces)	AD-245	12,032
	Photocopy in Lieu of Loan	1,819
	Interlibrary Loan Borrows	730
	Rapid Copy in Lieu of Loan	<u>793</u>
		15,374
	Periodical Routing	<u>5,995</u>
	Total . . . .	21,369
N O S Reports	Currently Charged	340
	In Circ. (Periodical Rout.)	243
	Not Currently Charged	<u>2,244</u>
	Total . . . .	2,827
Reserves Made		256

#### MAINTENANCE SECT. - BOOKSTACKS UNIT

Requests	Specials	4,153
	Regulars	2,237
	Photocopy (Includes paid and in lieu of loan photo and Rapid Copy	<u>1,363</u>
	Total . . . .	7,753

SEARCHES:	First -	456, 144 Found	Second -	513, 268 Found
	Special	75, 36 Found	Photo -	374, 157 Found

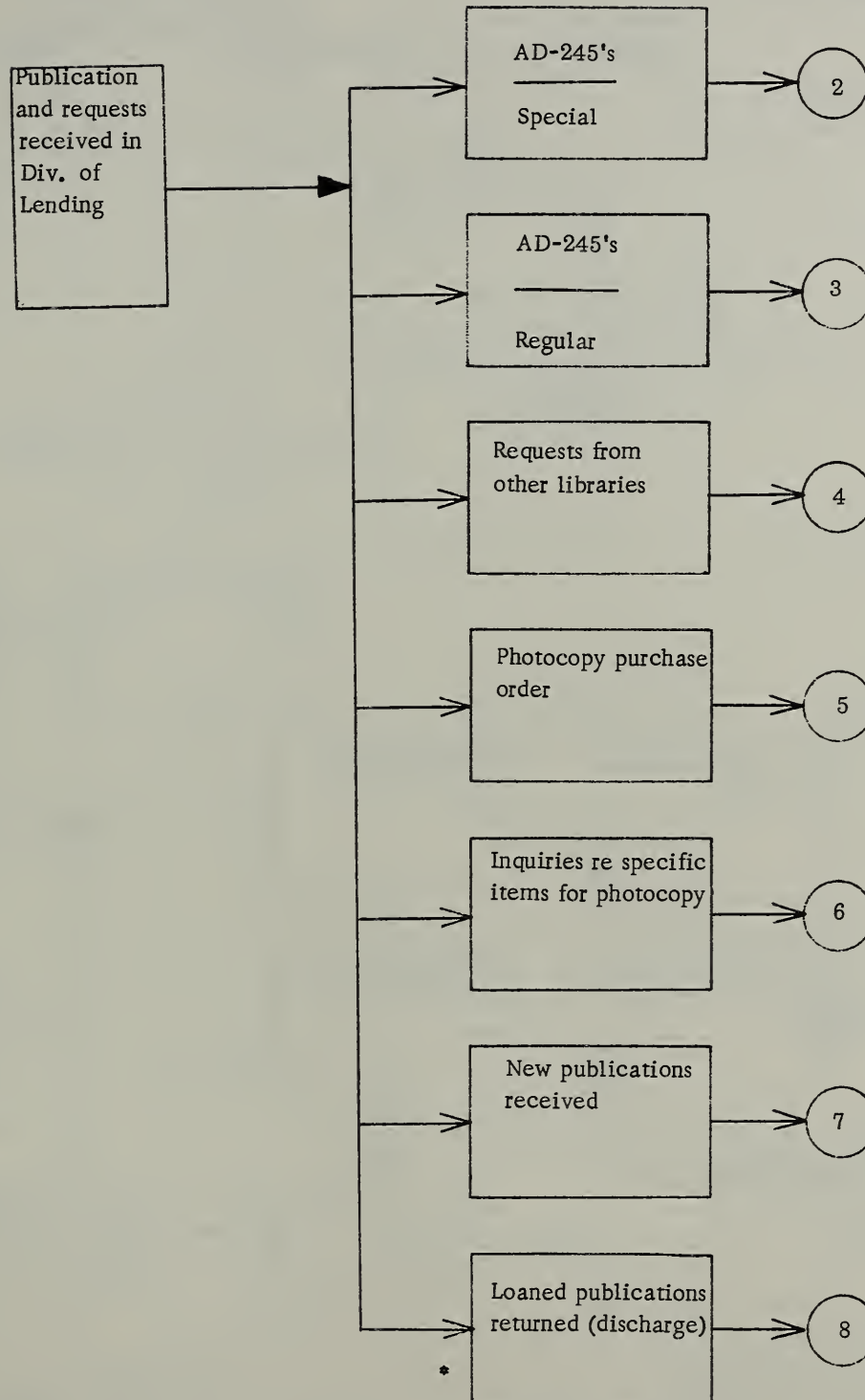
TOTALS: Searched - 1,418 Found - 605

P U B L I C   S E R V I C E S

MASTER LOGIC FLOW CHART

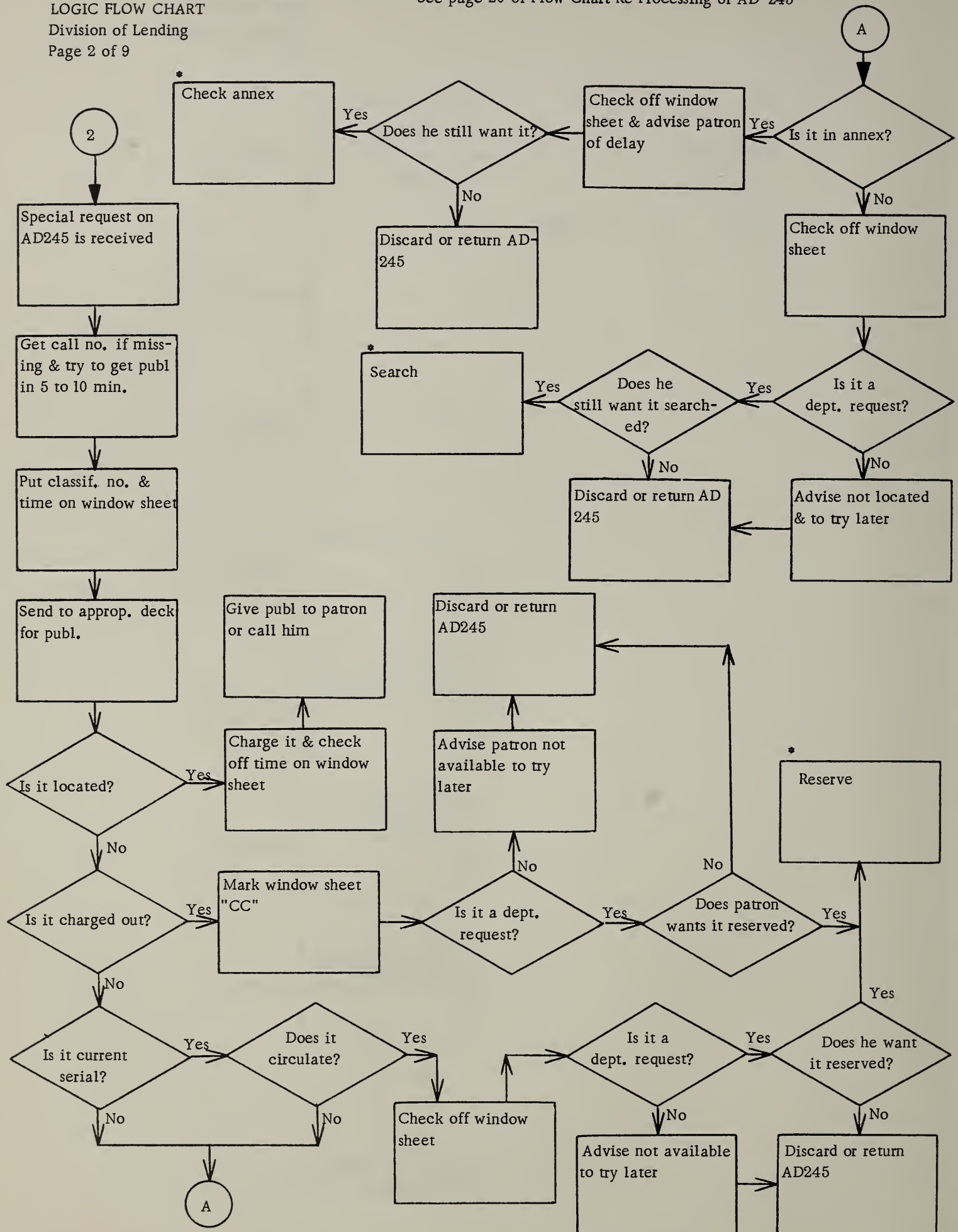
Division of Lending

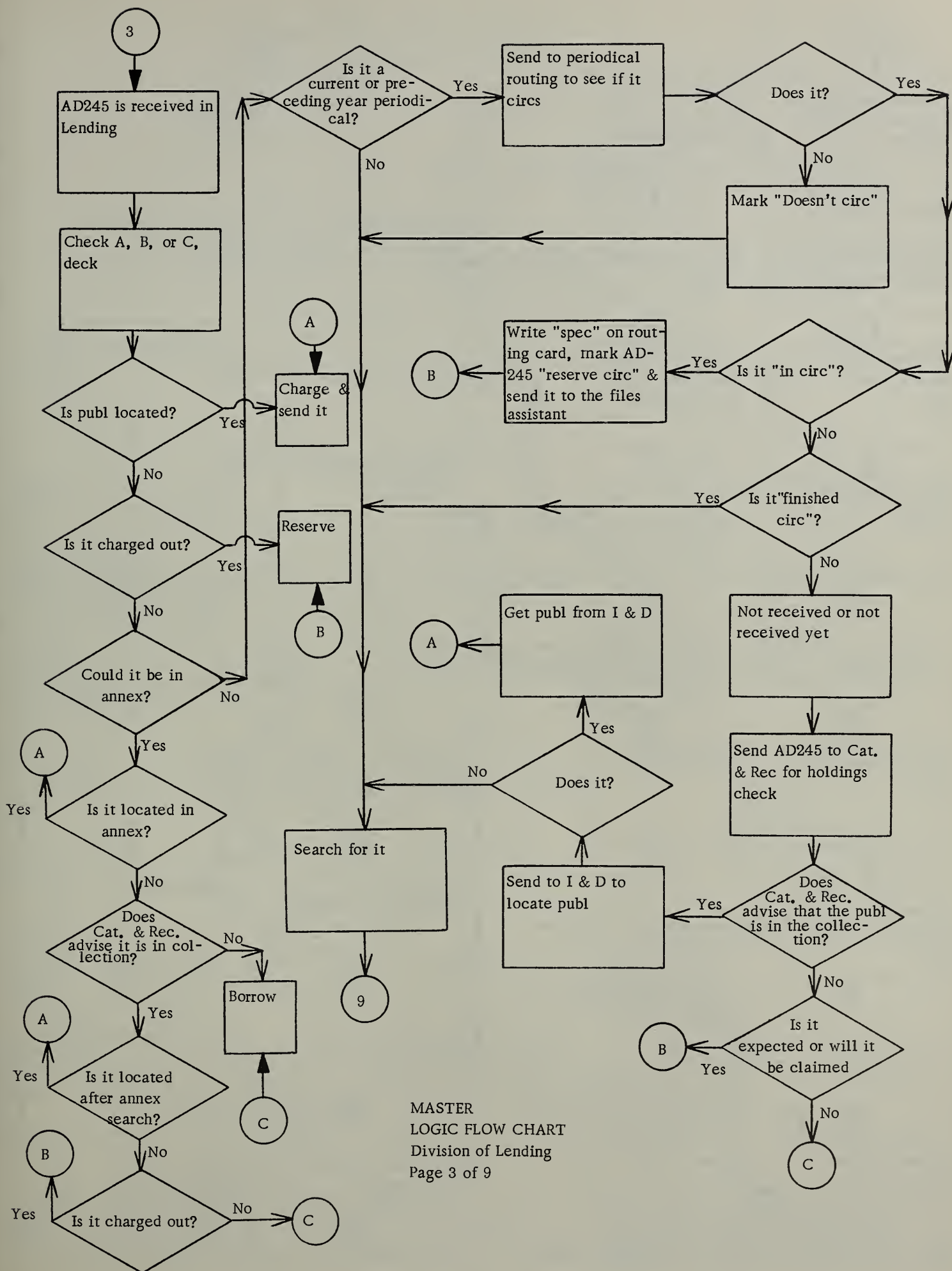
9 pages



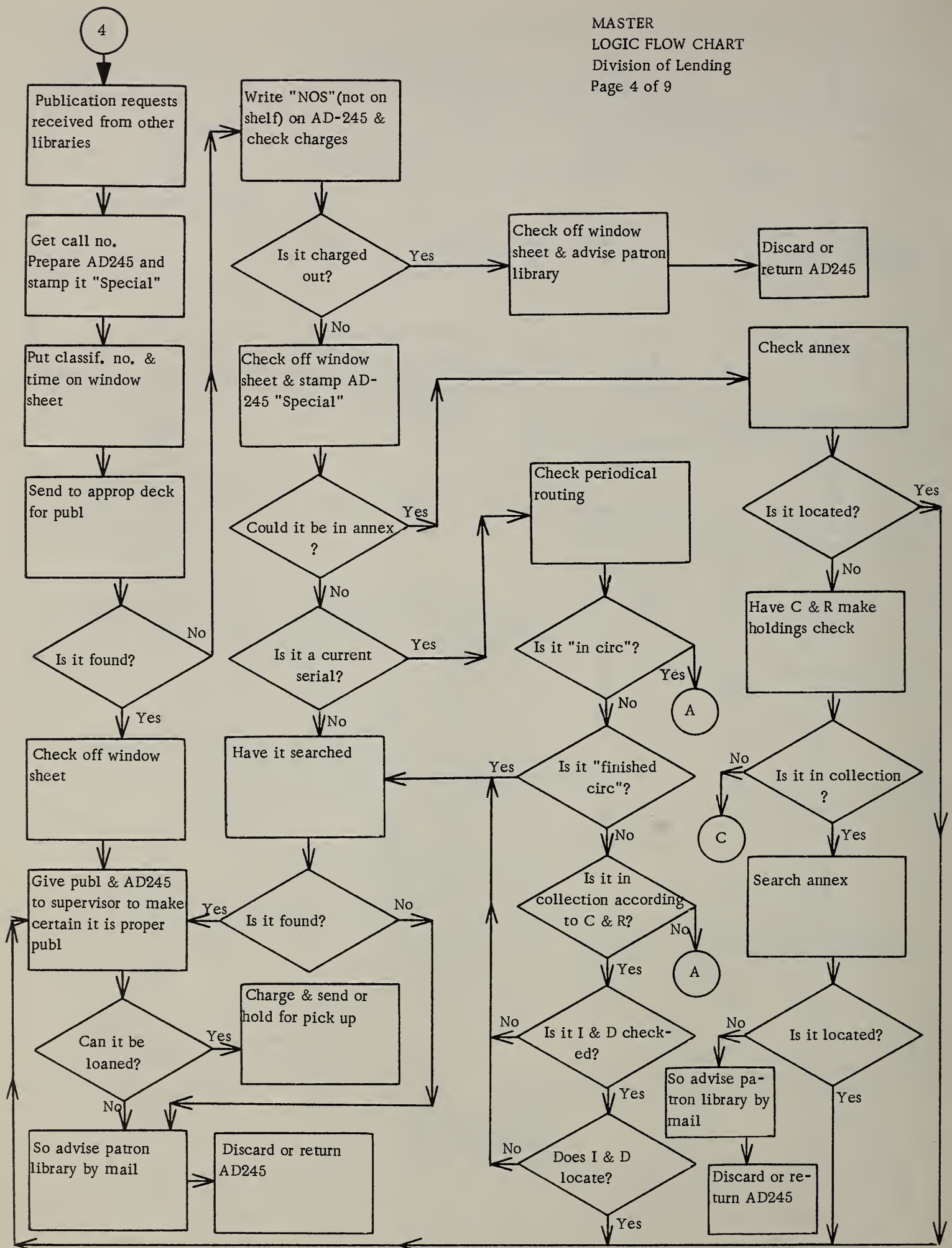
\*See page 20 of Flow Chart  
Re Processing of AD-245



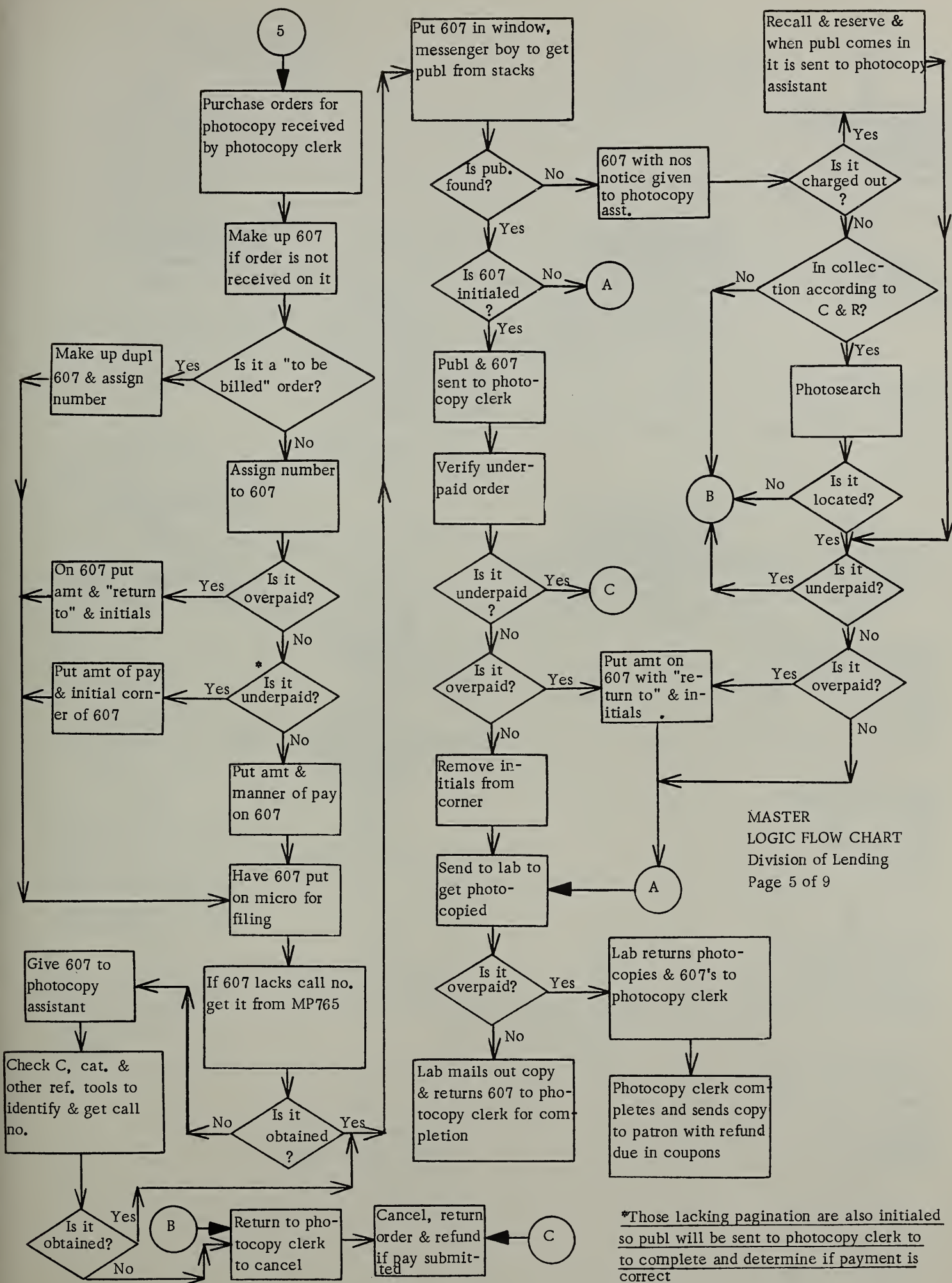


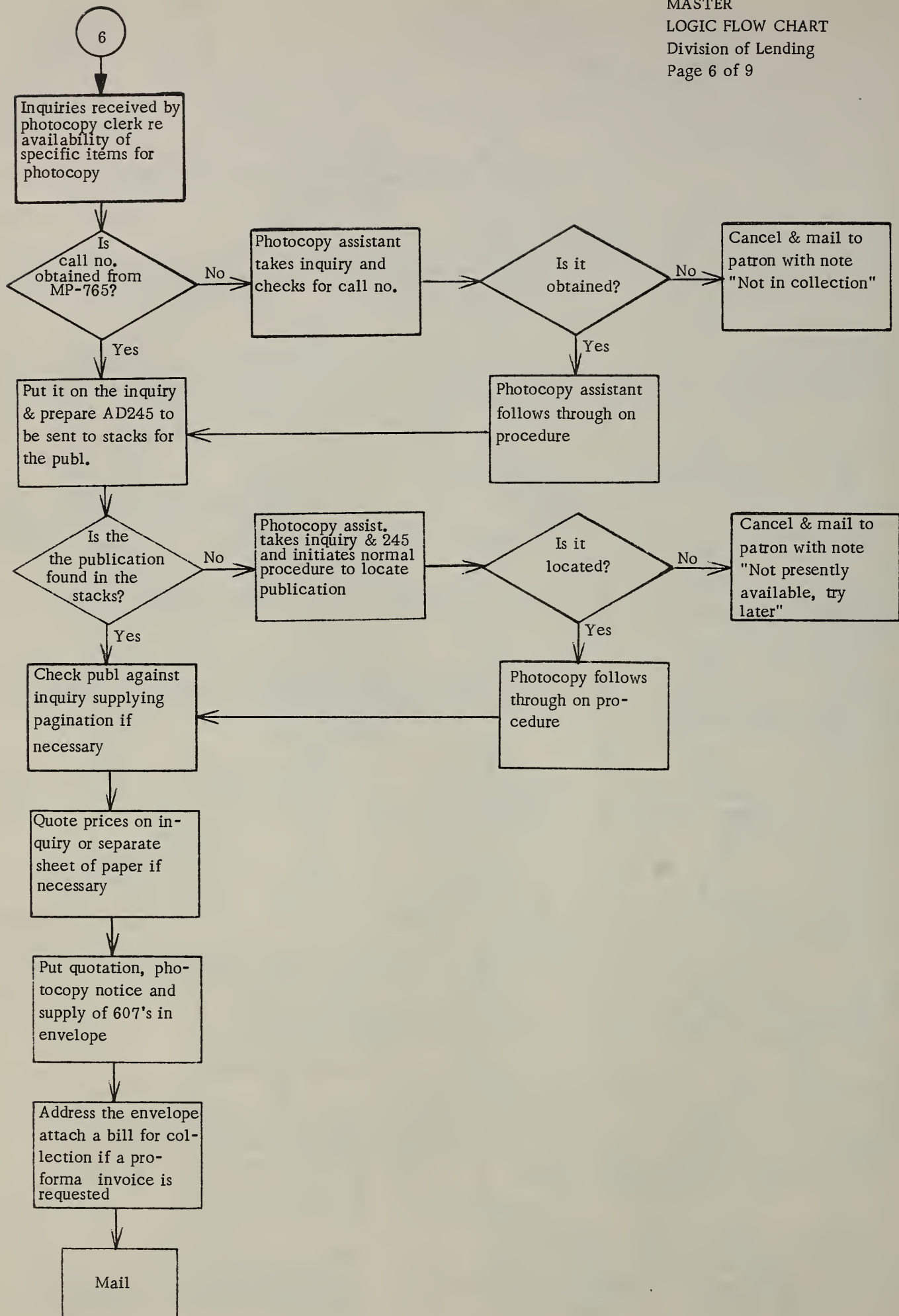


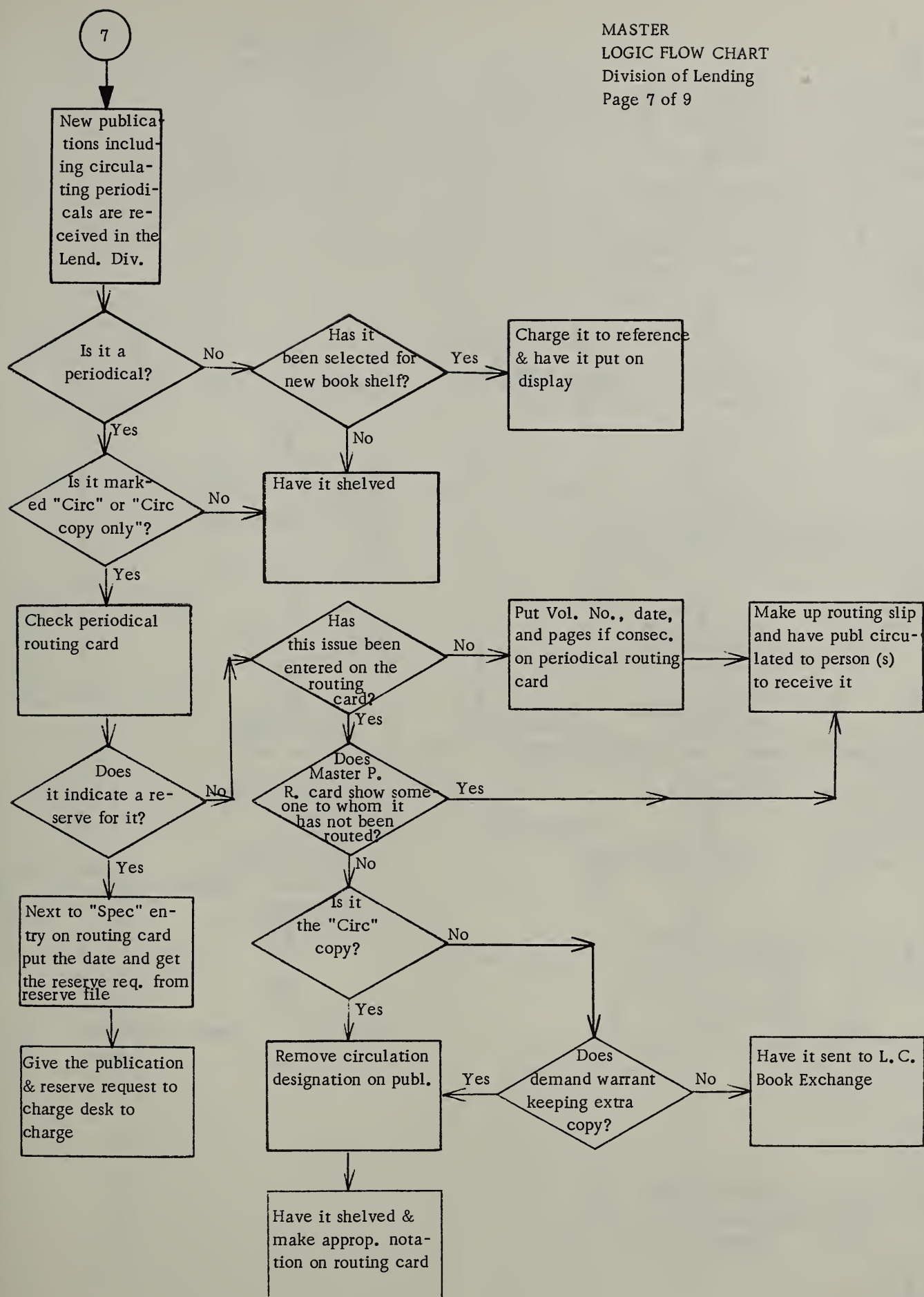
MASTER  
LOGIC FLOW CHART  
Division of Lending  
Page 3 of 9



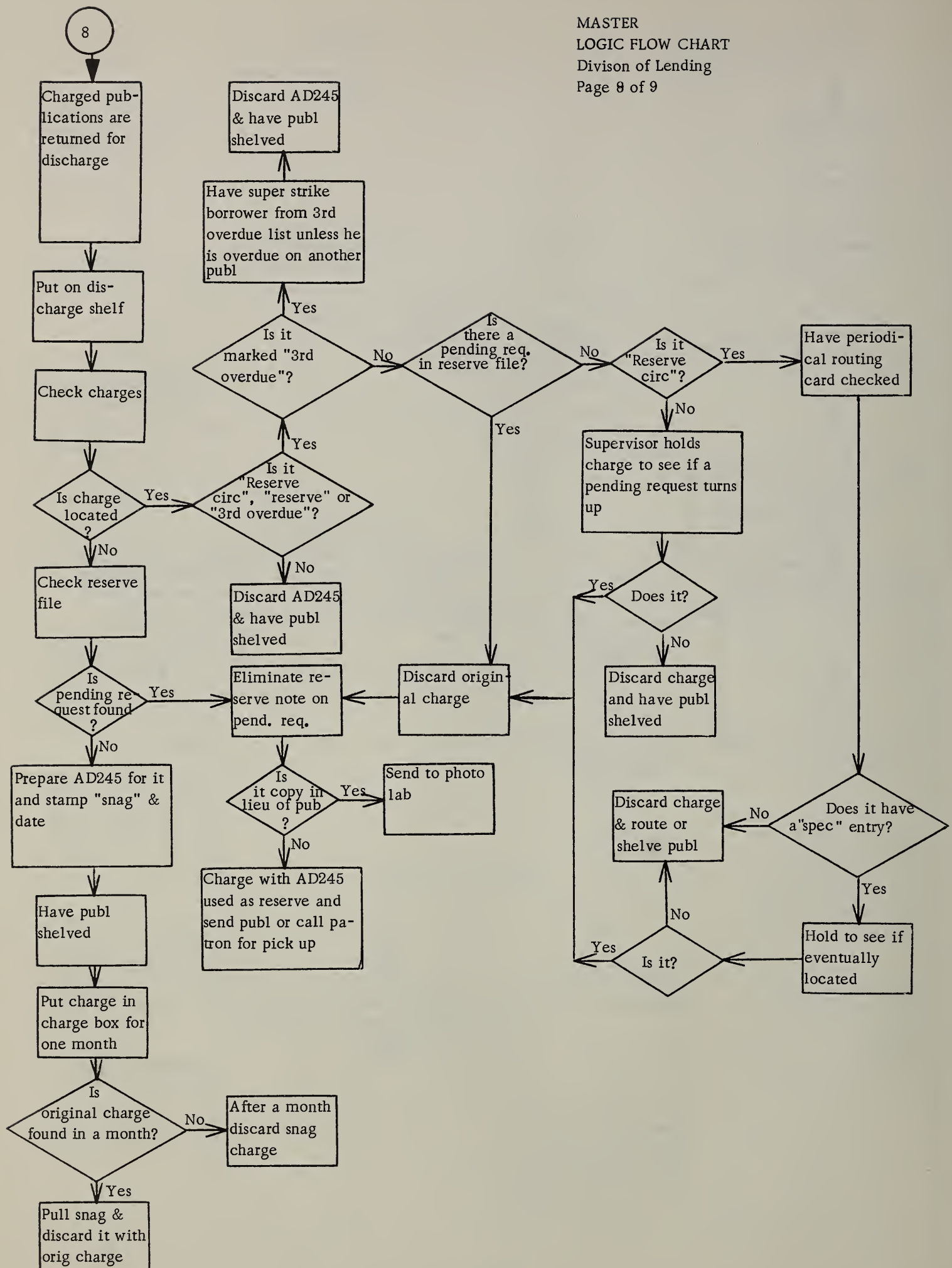




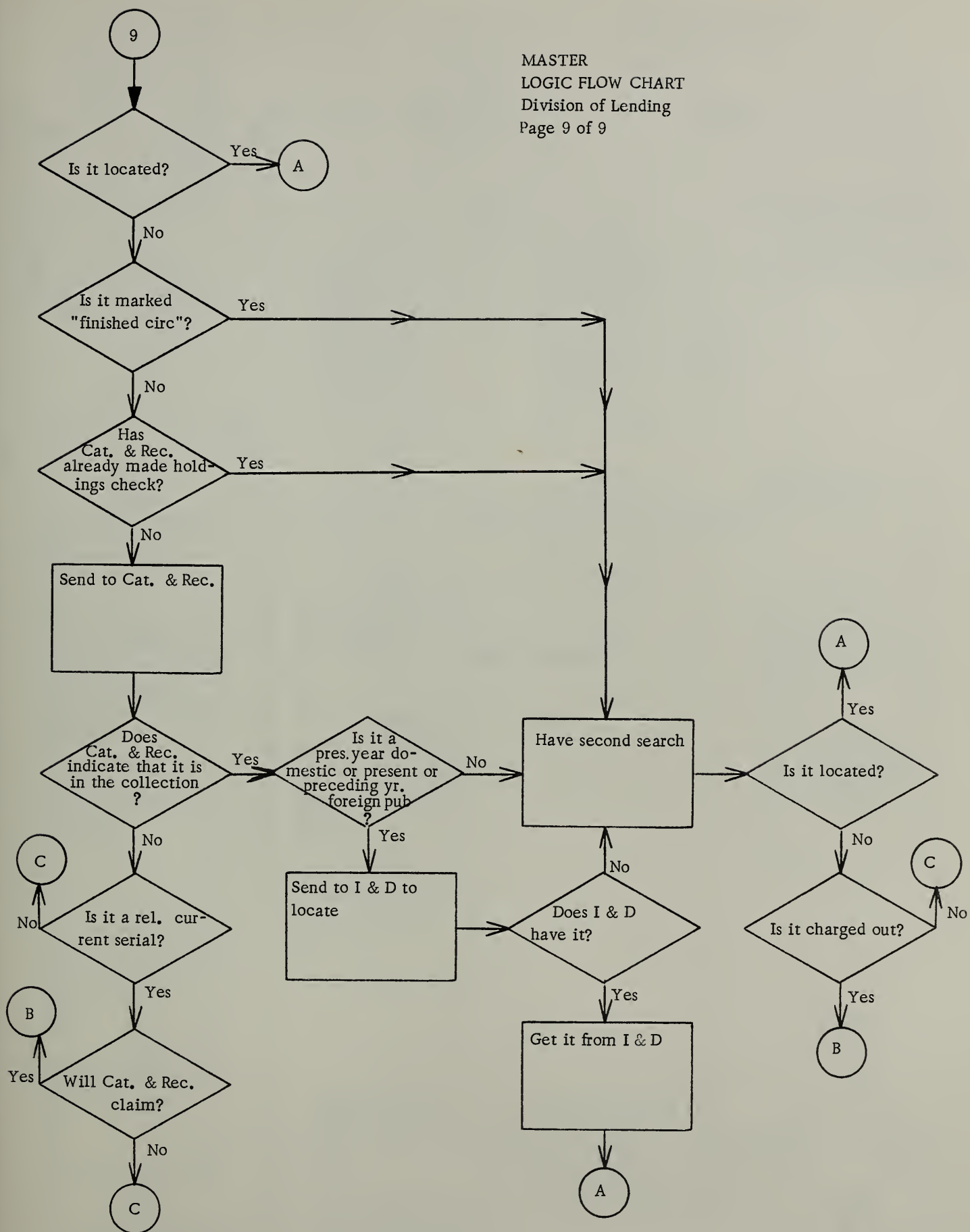








MASTER  
LOGIC FLOW CHART  
Division of Lending  
Page 9 of 9



P U B L I C   S E R V I C E S

FLOW PROCESS CHARTS

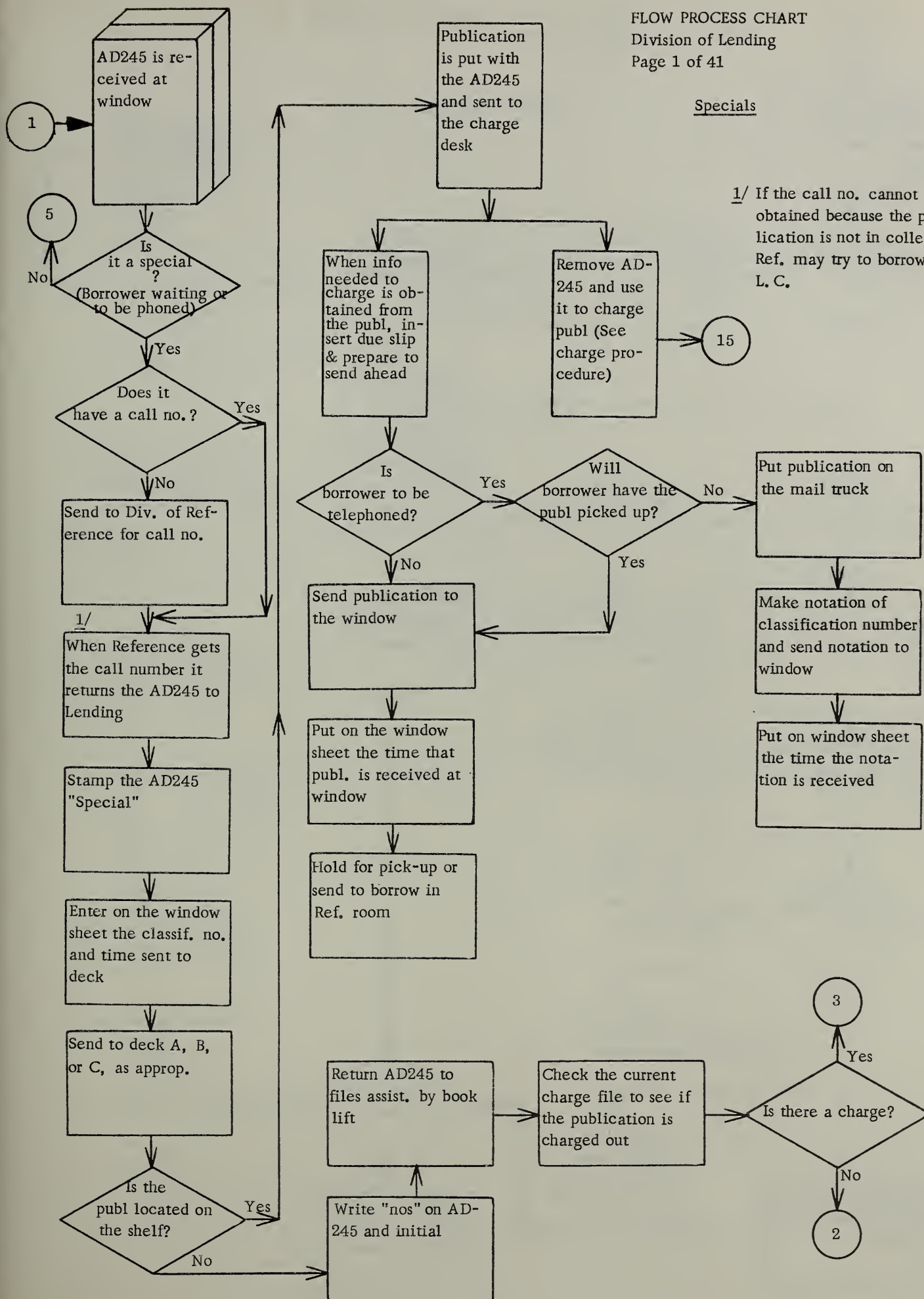
Division of Lending

41 pages



Specials

1/ If the call no. cannot be obtained because the publication is not in collection Ref. may try to borrow from L. C.

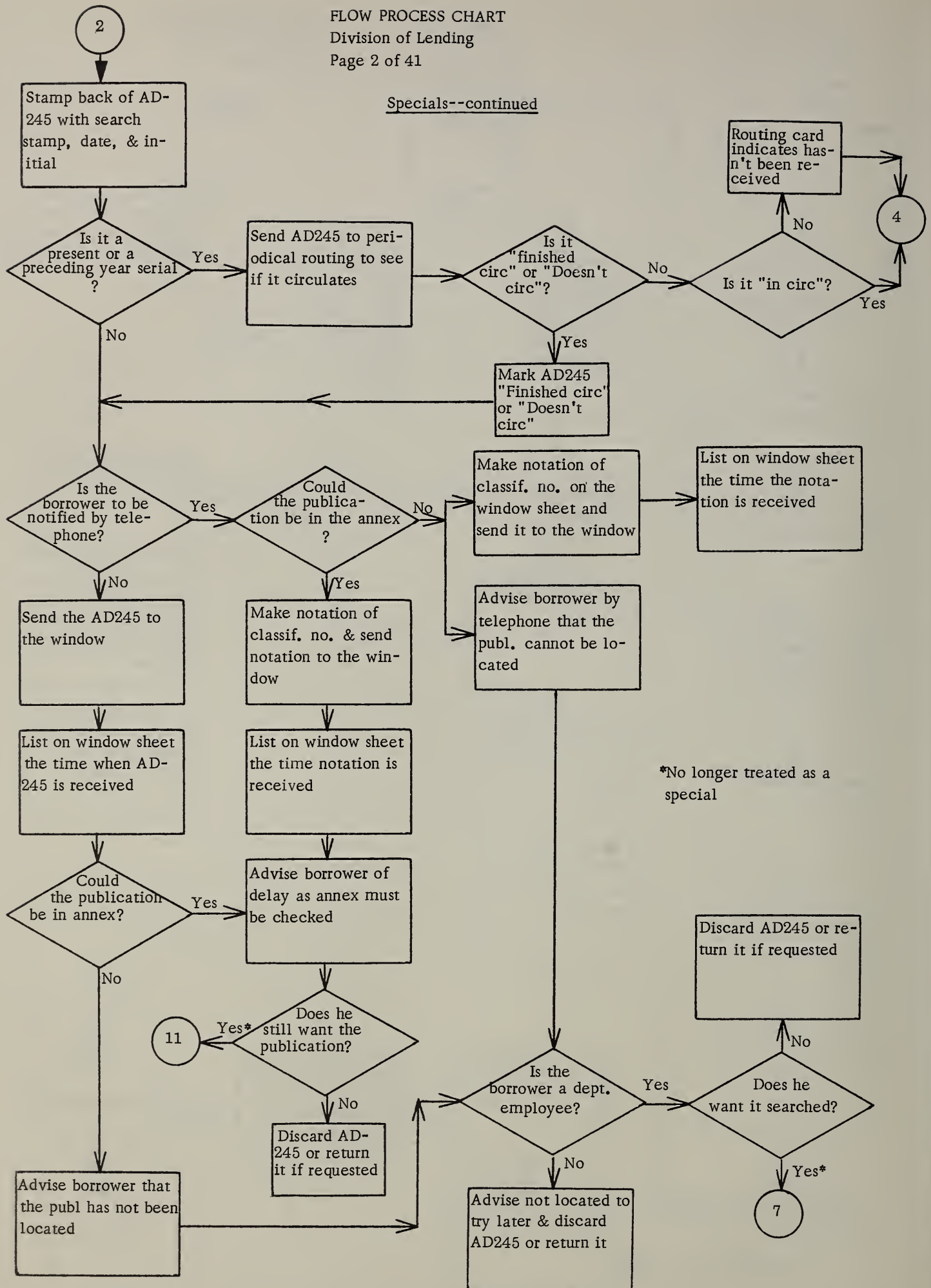


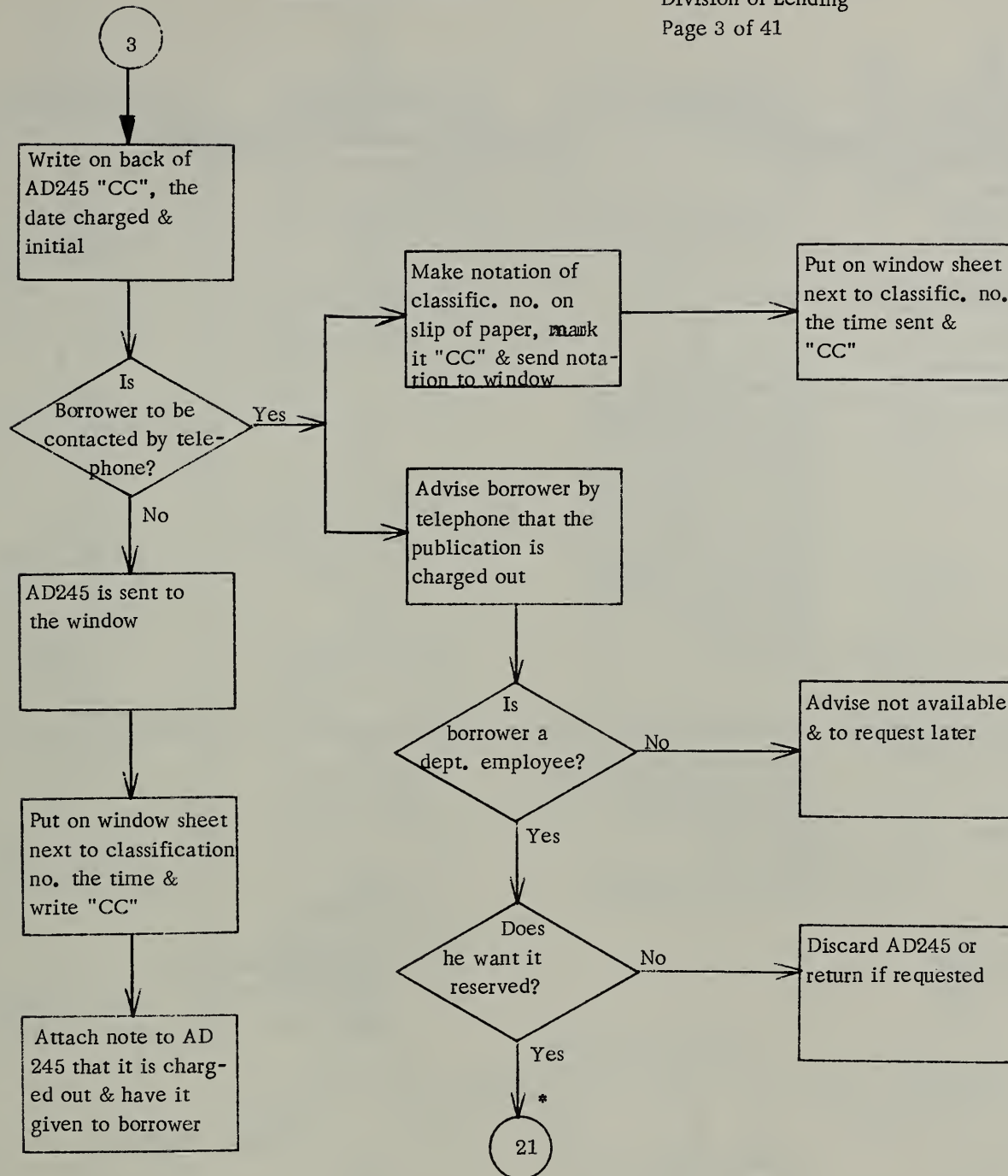
FLOW PROCESS CHART

Division of Lending

Page 2 of 41

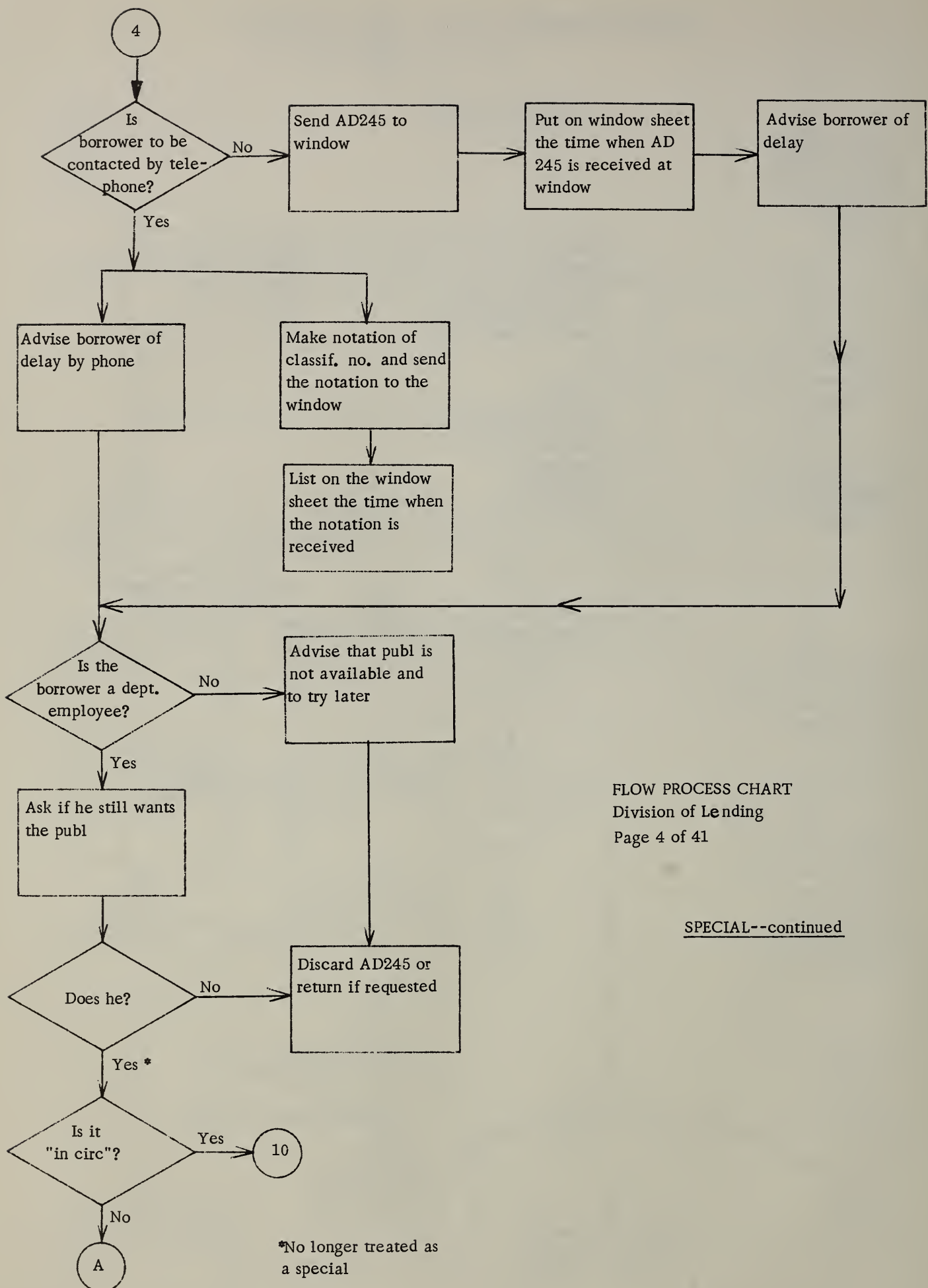
Specials--continued





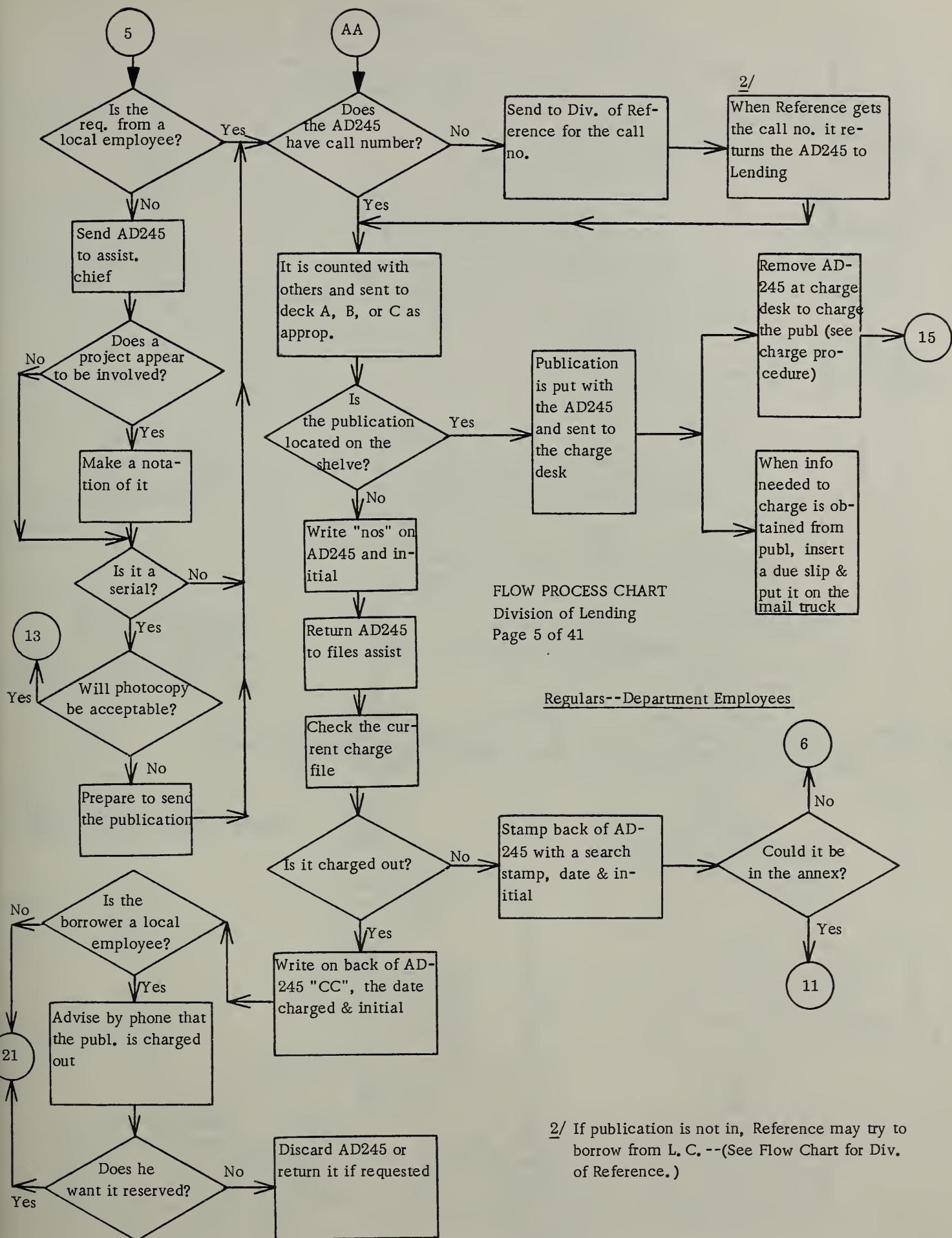
\*No longer treated as special



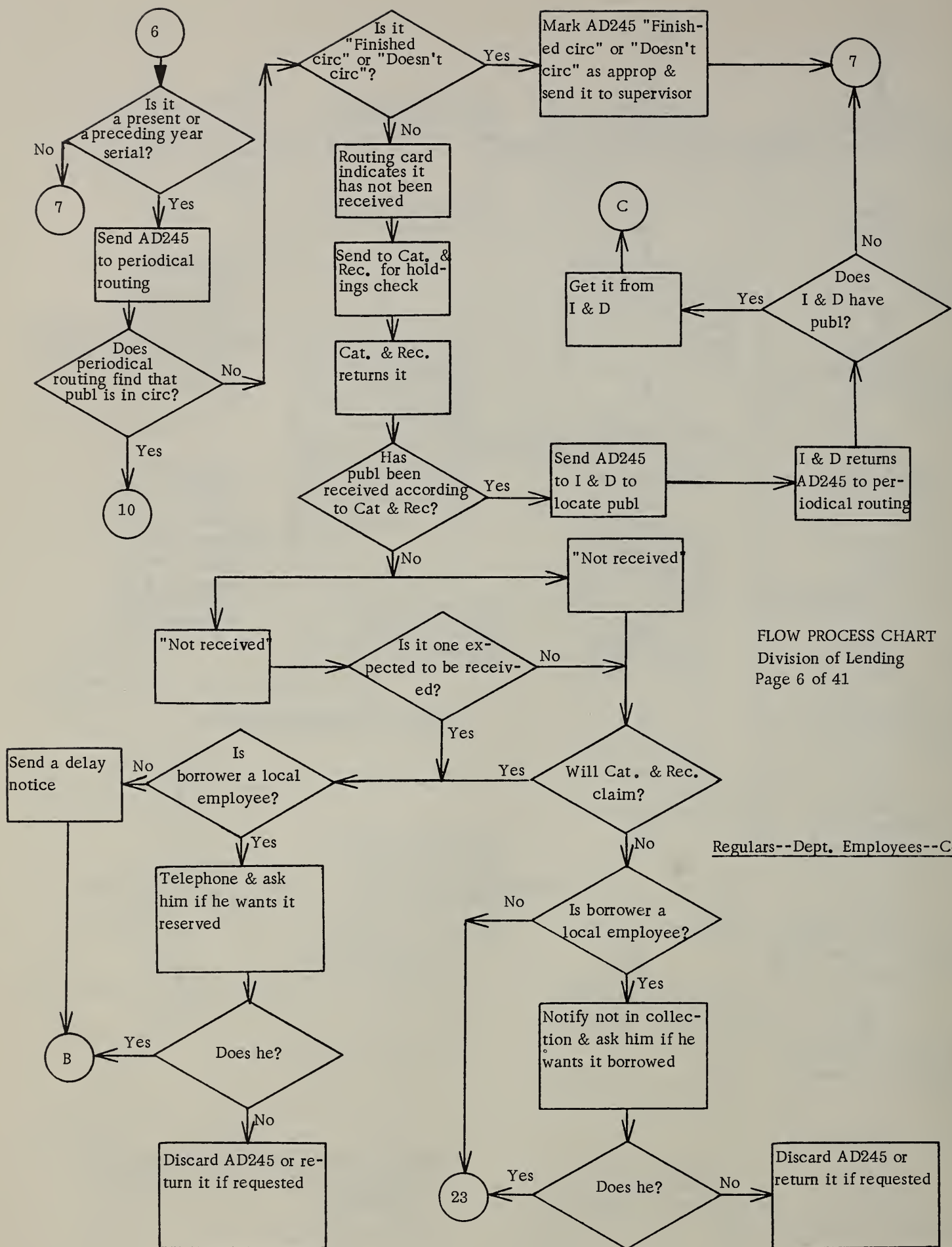


FLOW PROCESS CHART  
Division of Lending  
Page 4 of 41

SPECIAL--continued



2/ If publication is not in, Reference may try to borrow from L. C. --(See Flow Chart for Div. of Reference.)

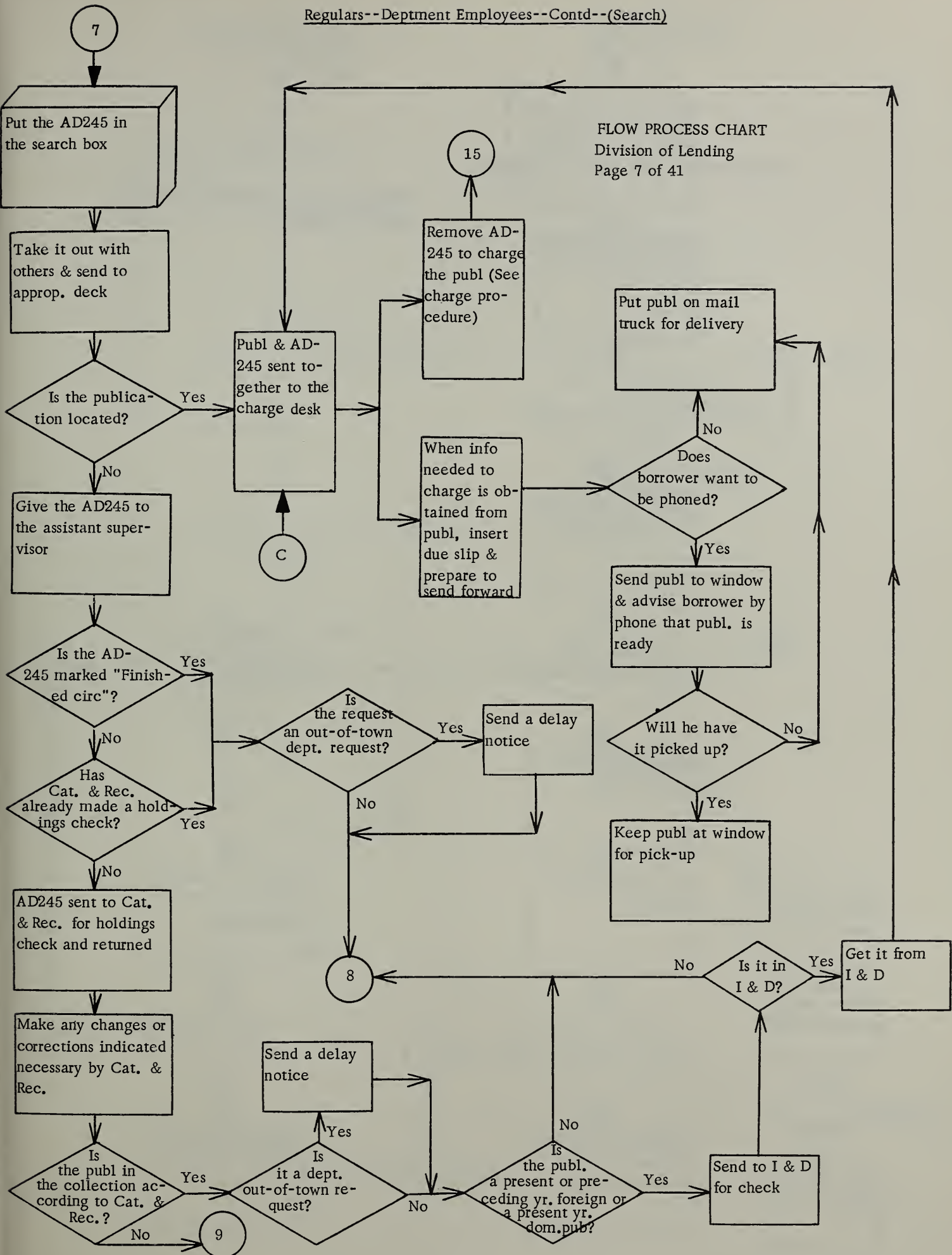


FLOW PROCESS CHART  
Division of Lending  
Page 6 of 41

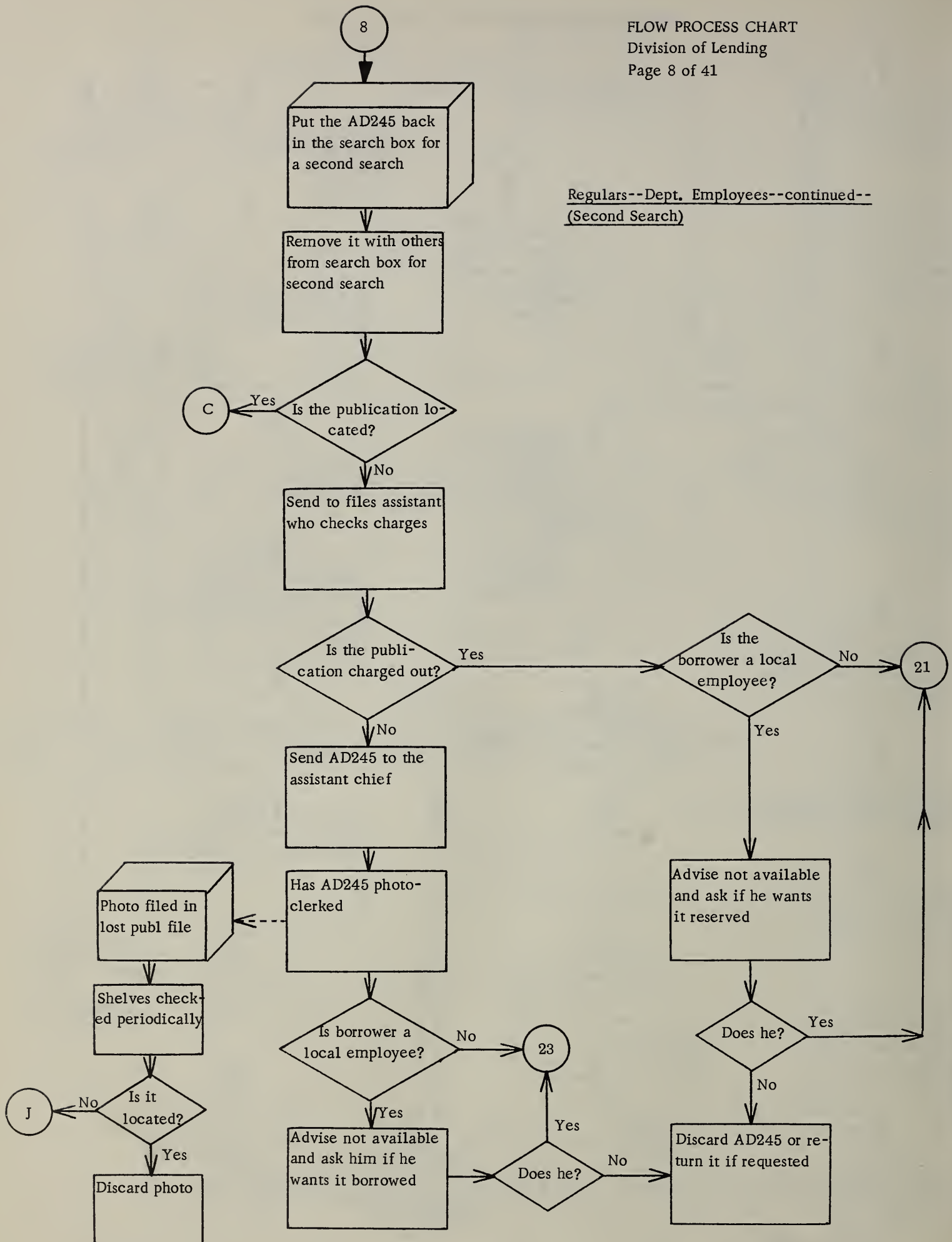
Regulars--Dept. Employees--Contd



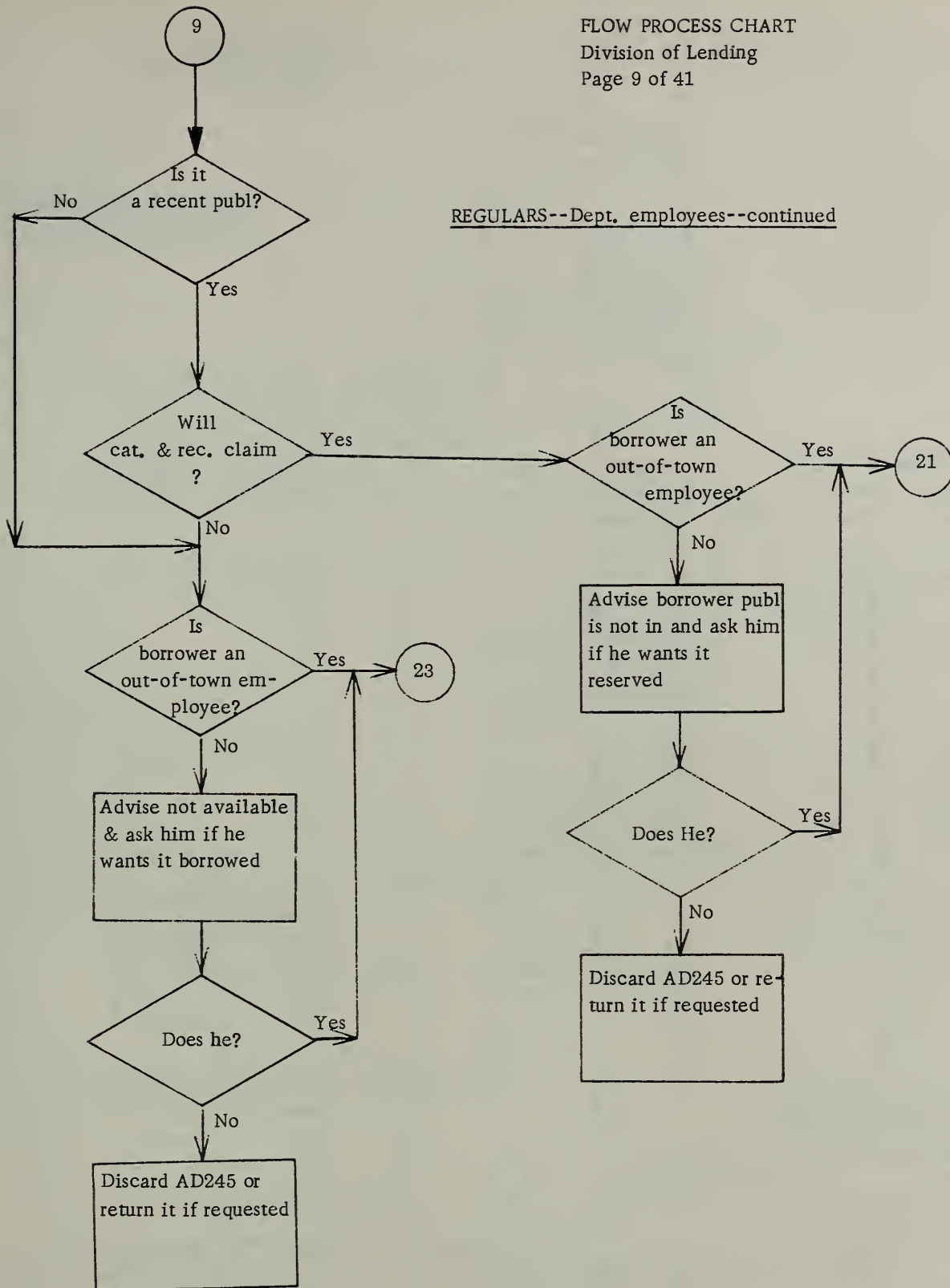
FLOW PROCESS CHART  
Division of Lending  
Page 7 of 41



Regulars--Dept. Employees--continued--  
(Second Search)

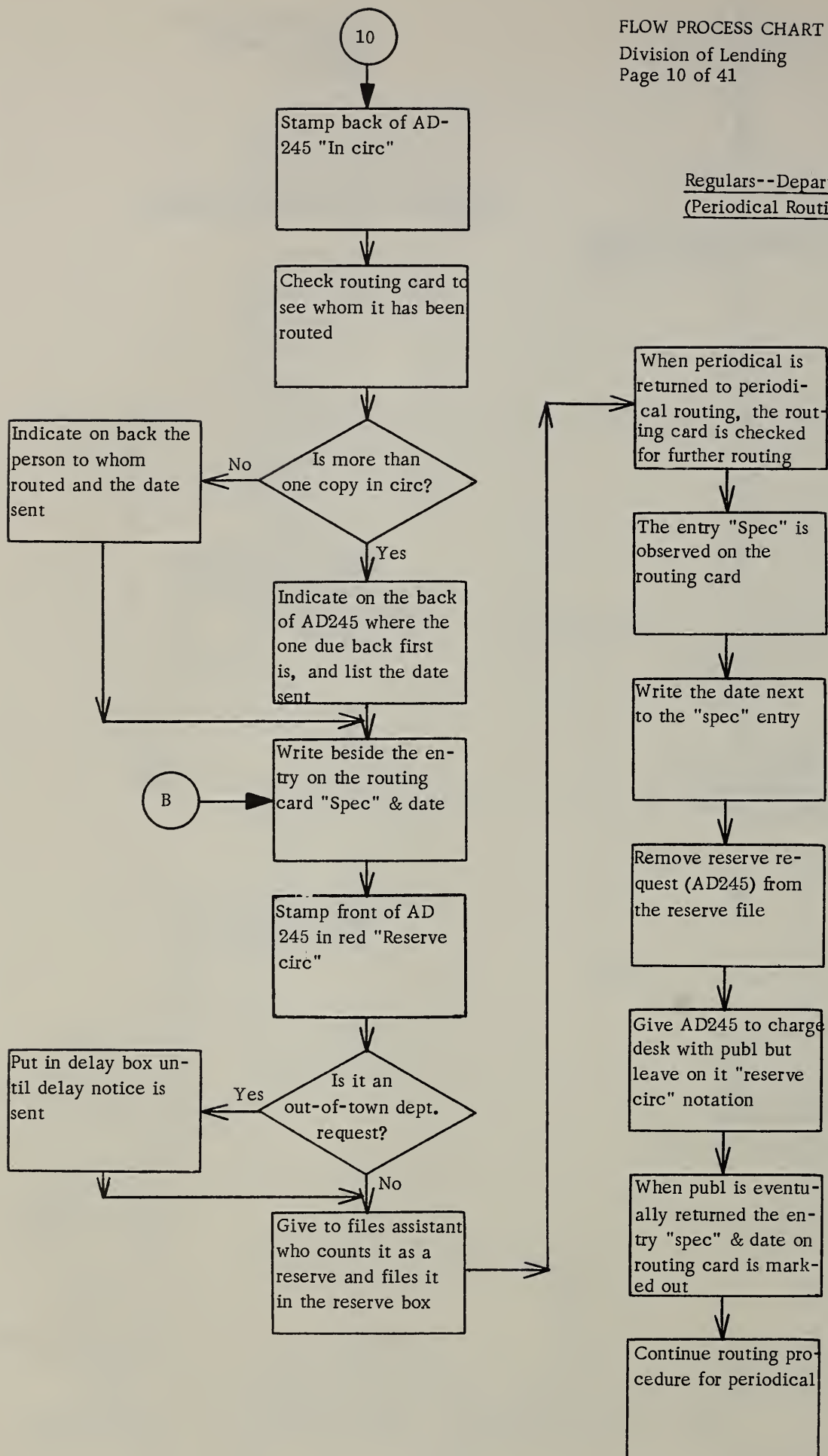


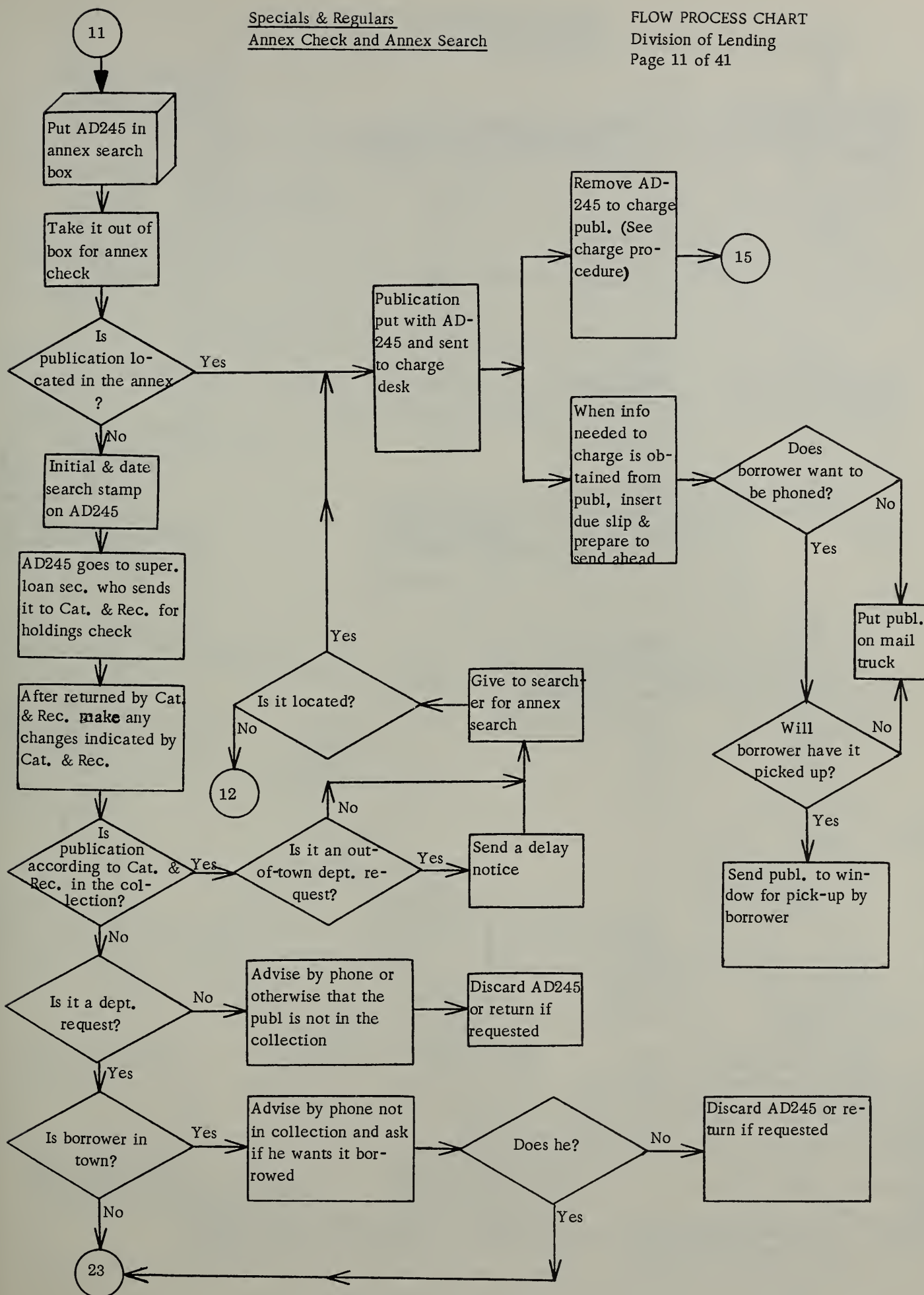
REGULARS--Dept. employees--continued



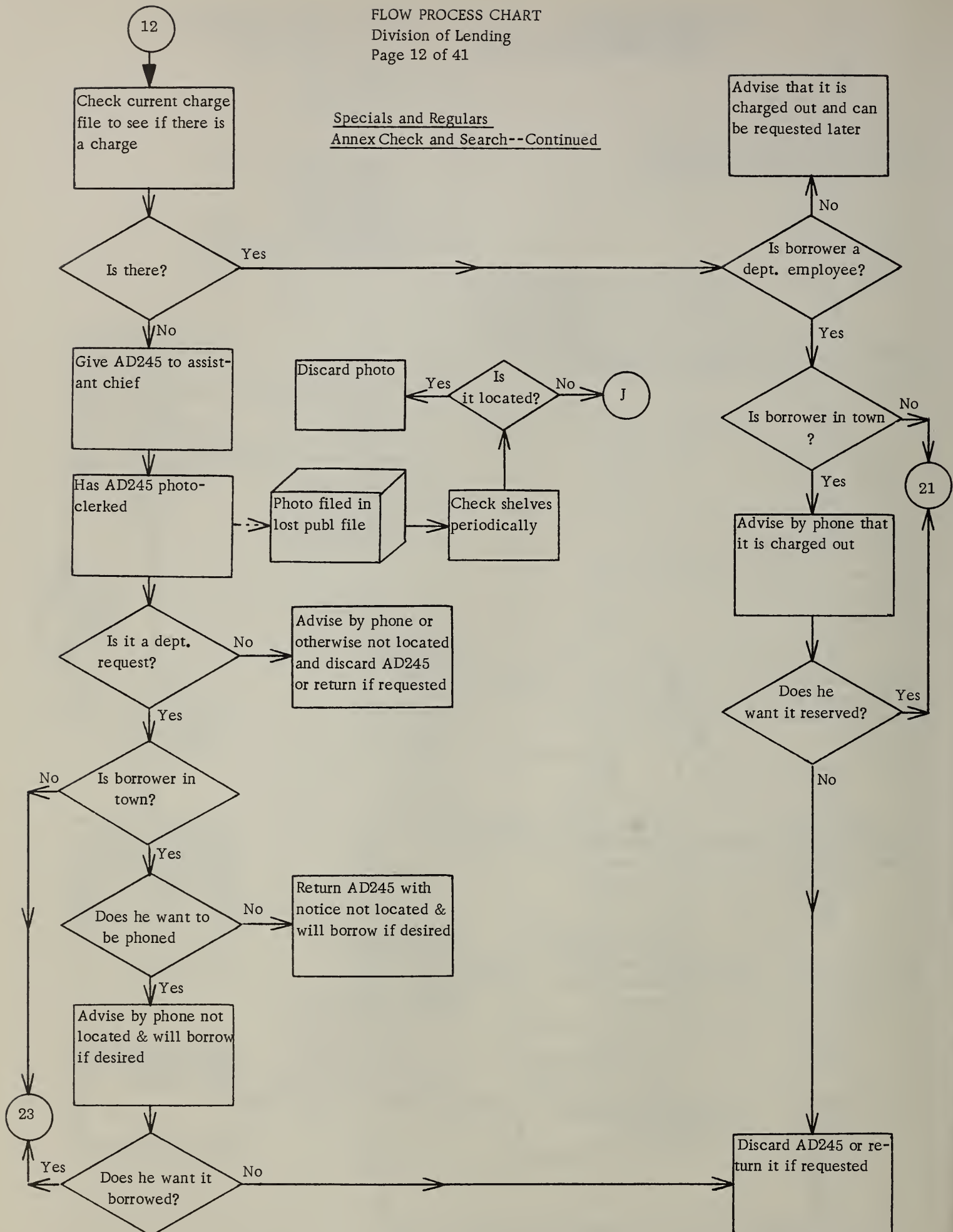


Regulars--Department Employees--contd  
(Periodical Routing--Reserve Circ)

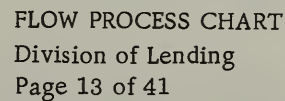


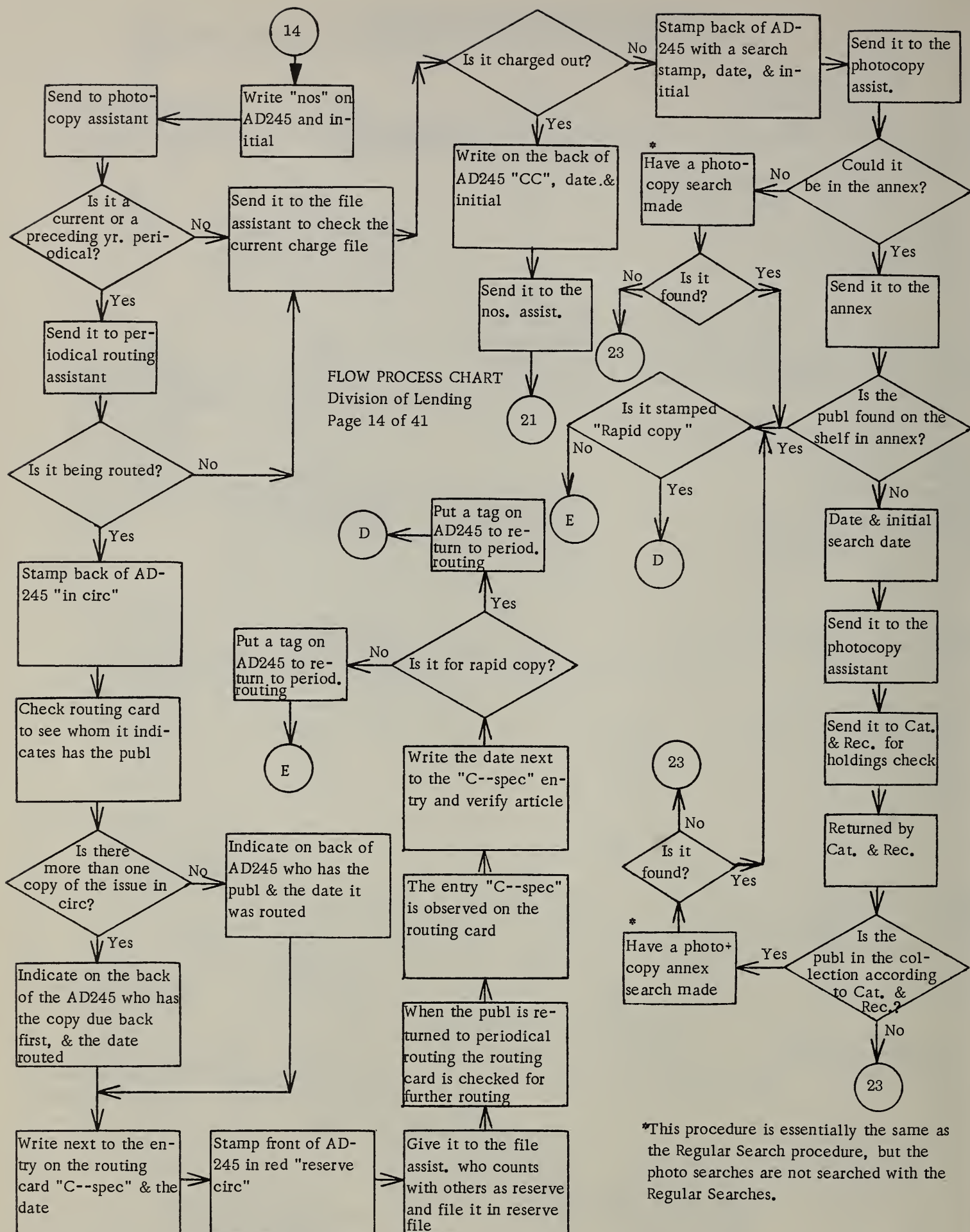


Specials and Regulars  
Annex Check and Search--Continued

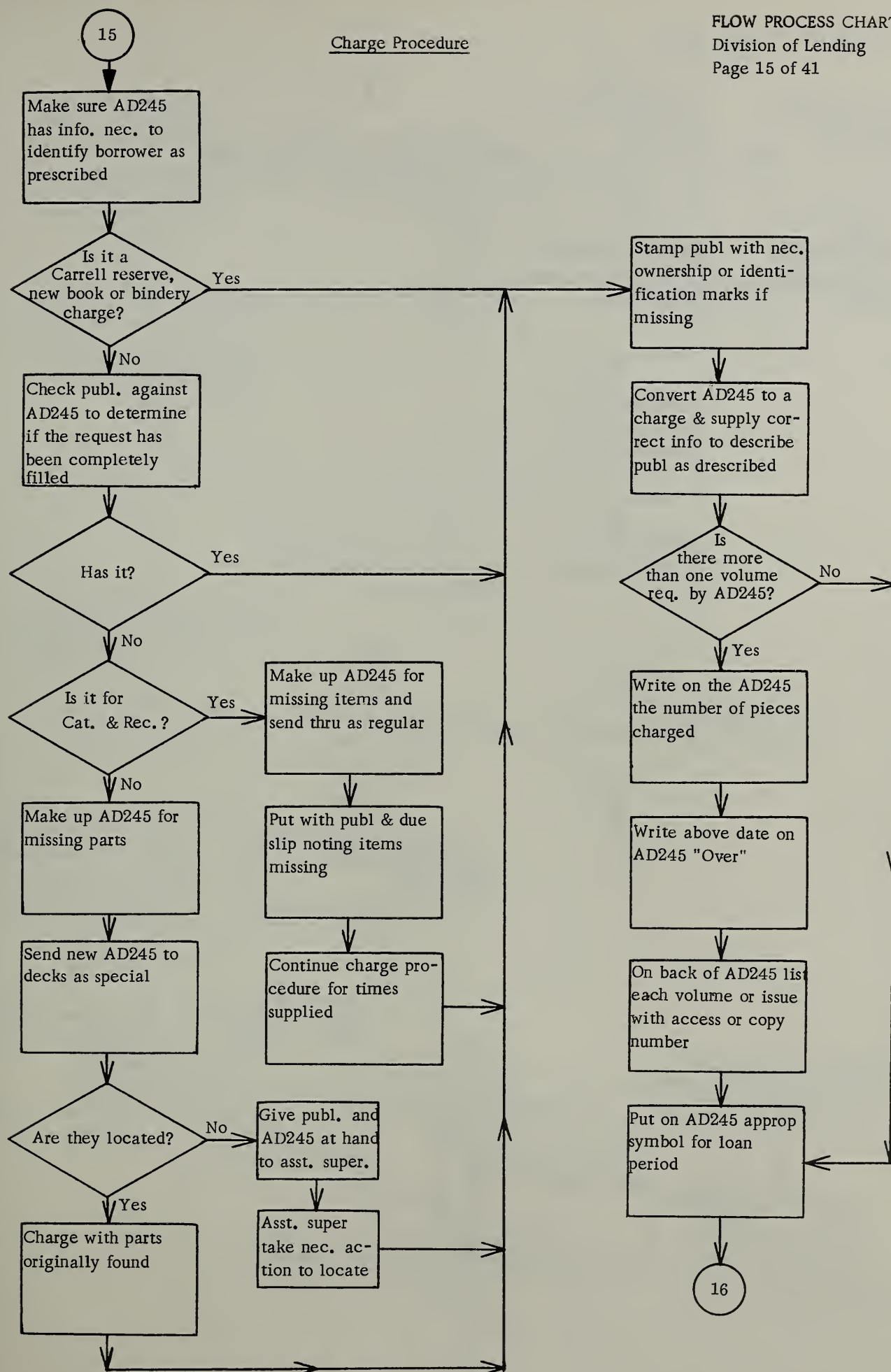




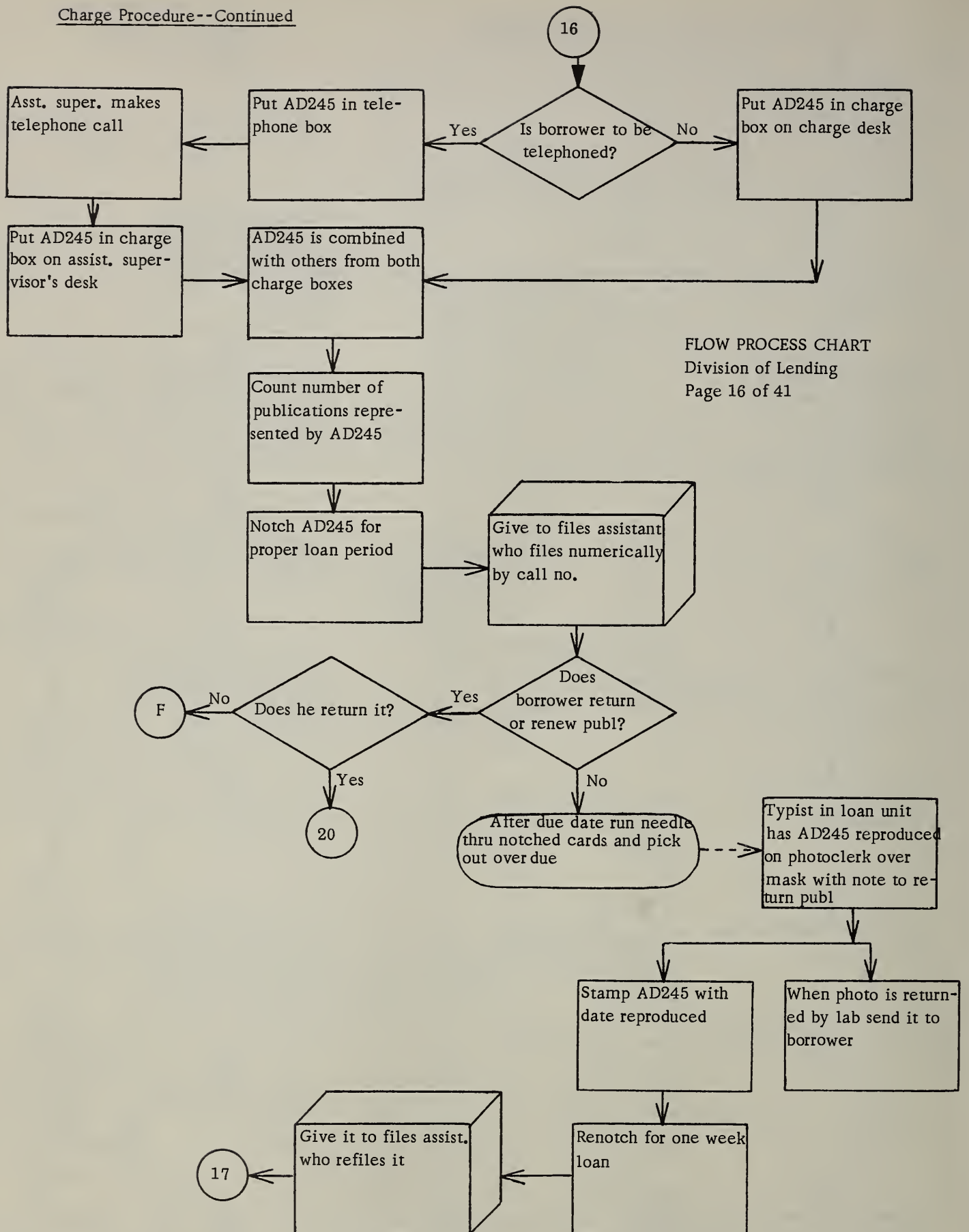




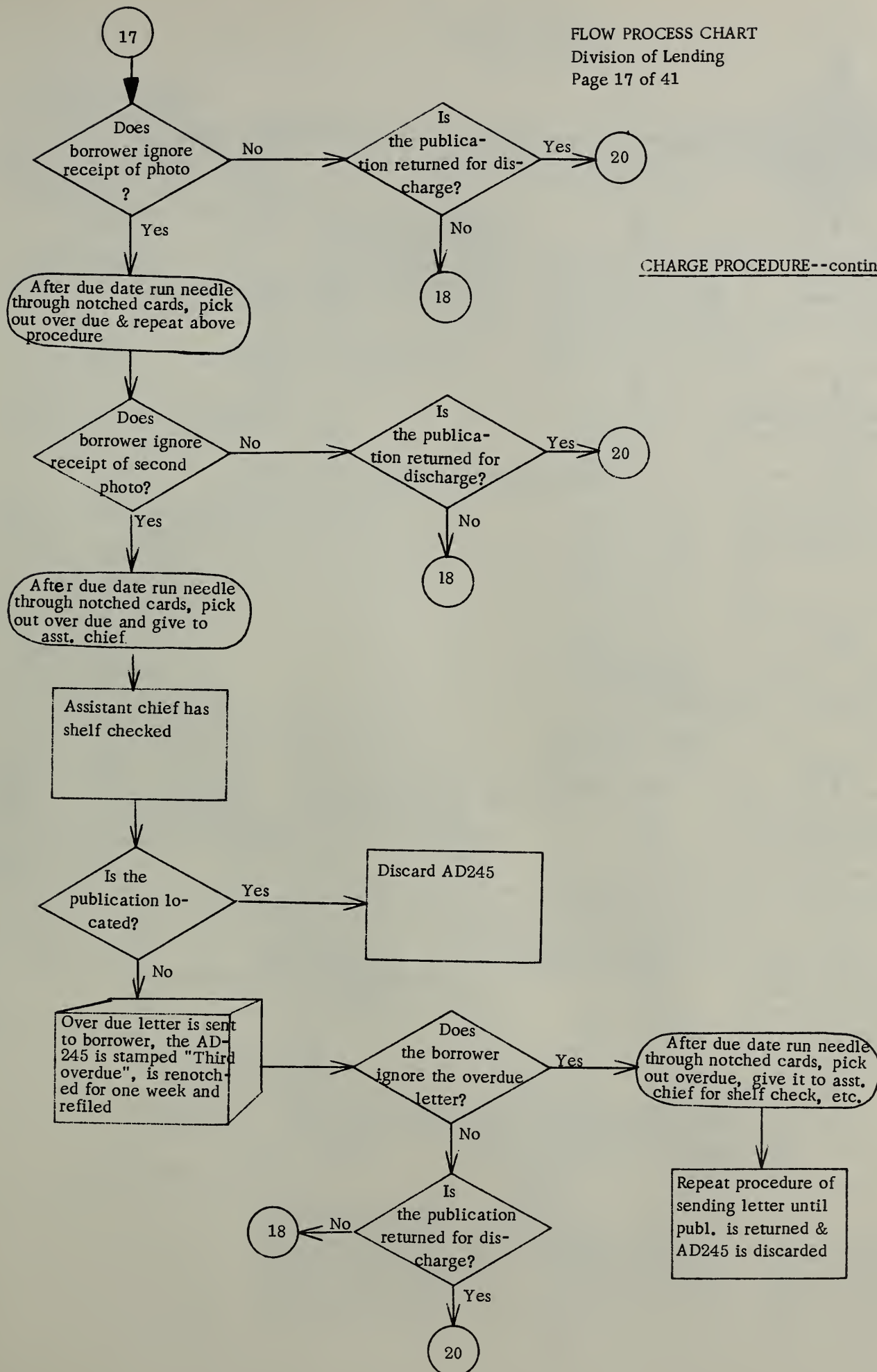
\*This procedure is essentially the same as the Regular Search procedure, but the photo searches are not searched with the Regular Searches.

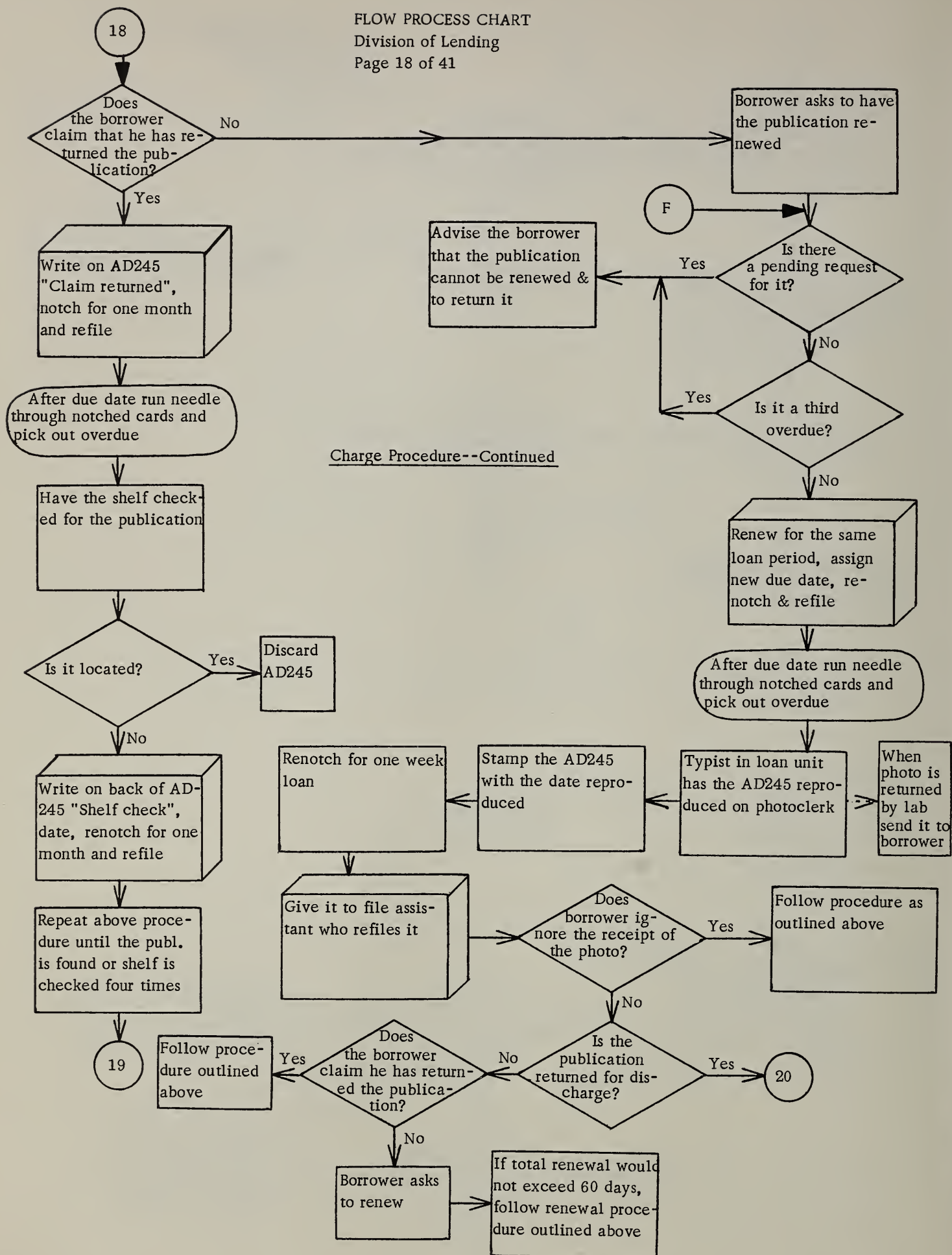
Charge Procedure



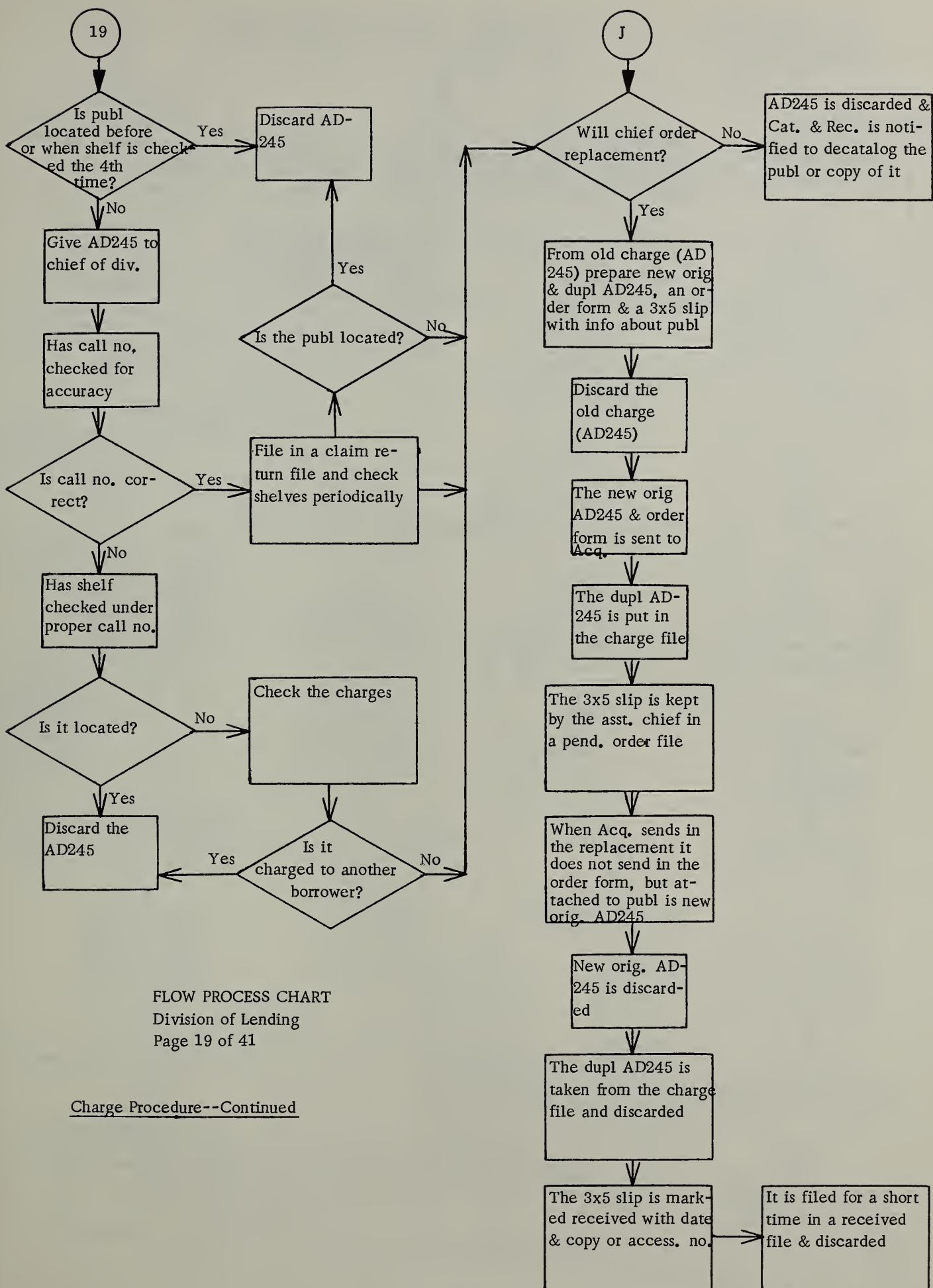


CHARGE PROCEDURE--continued



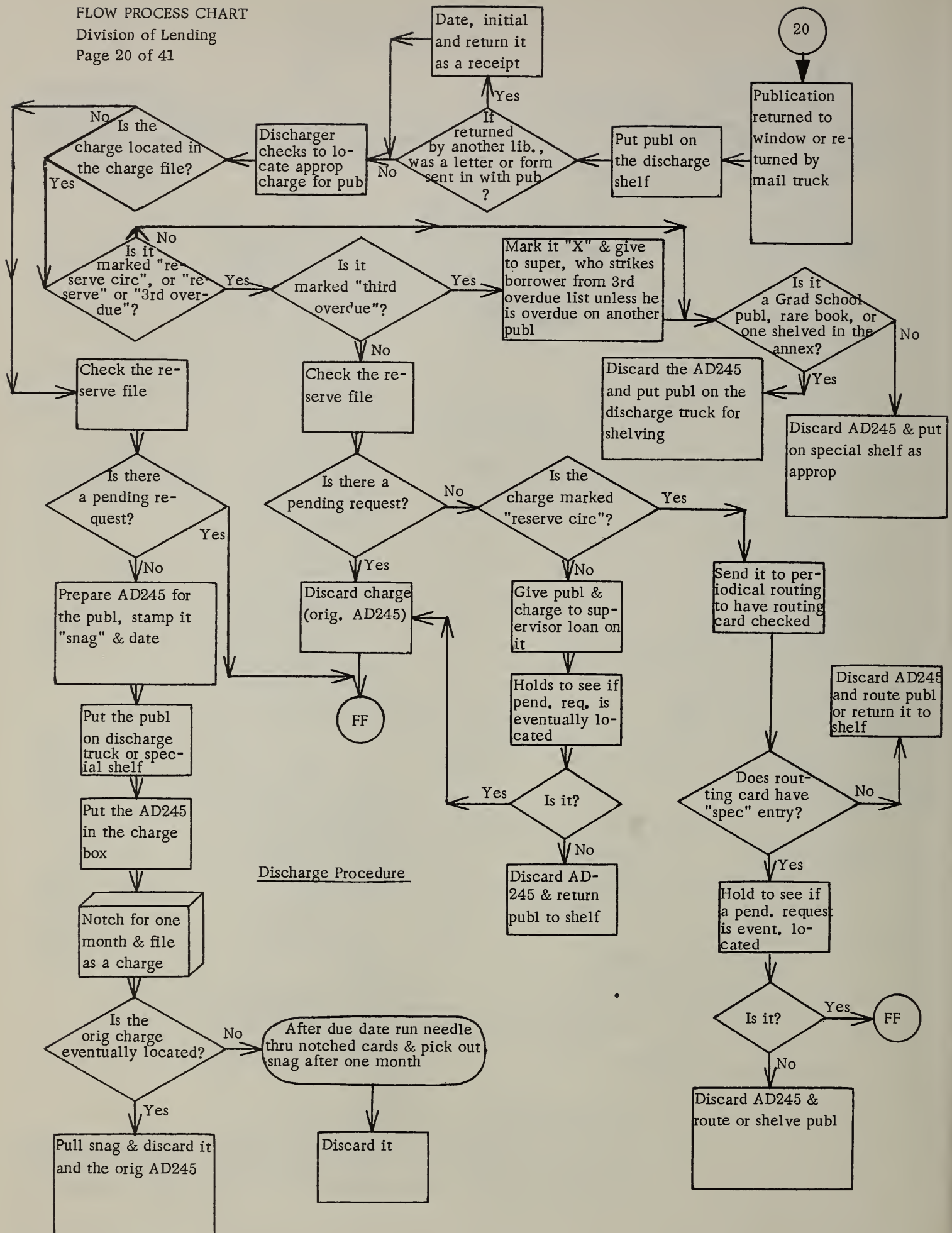


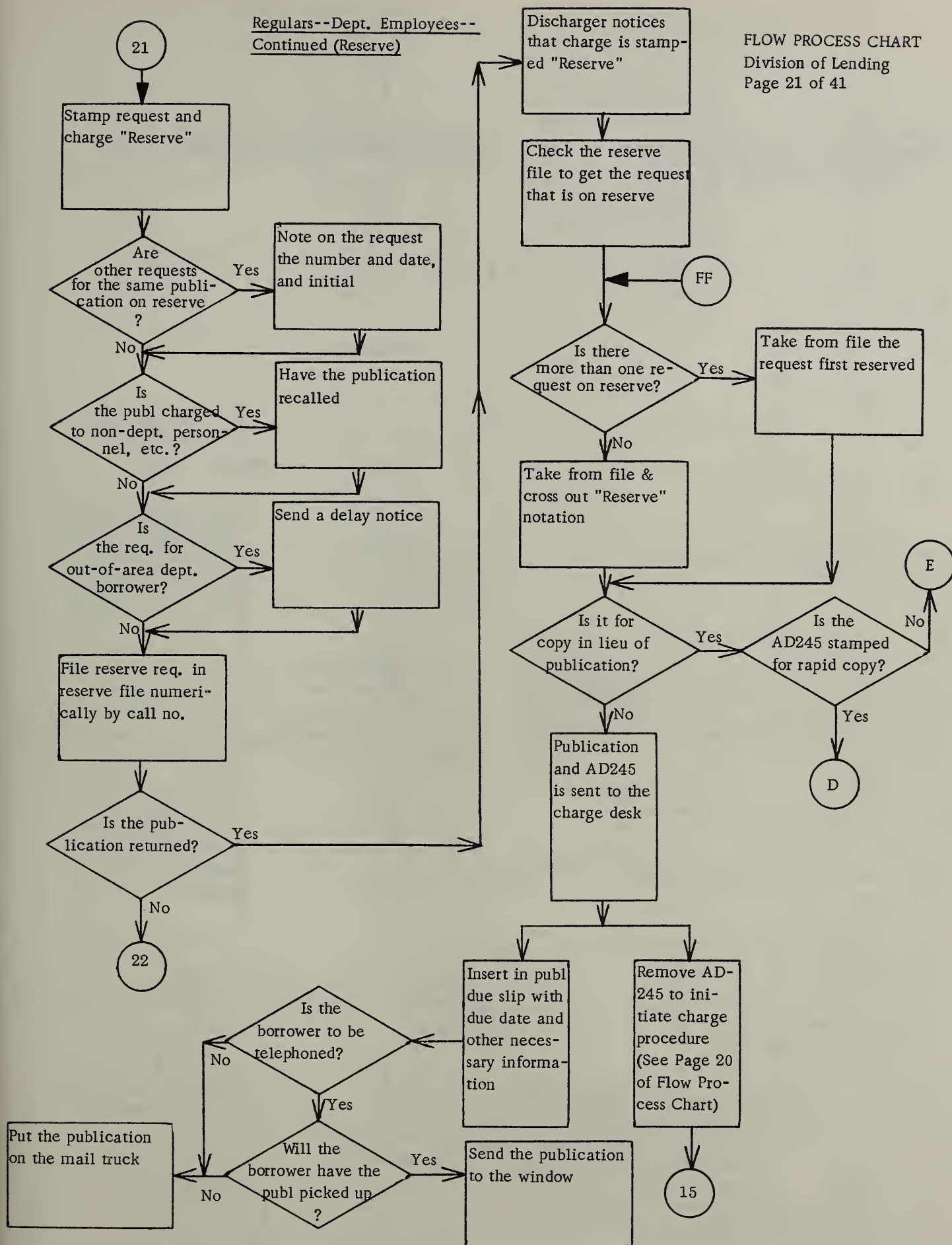




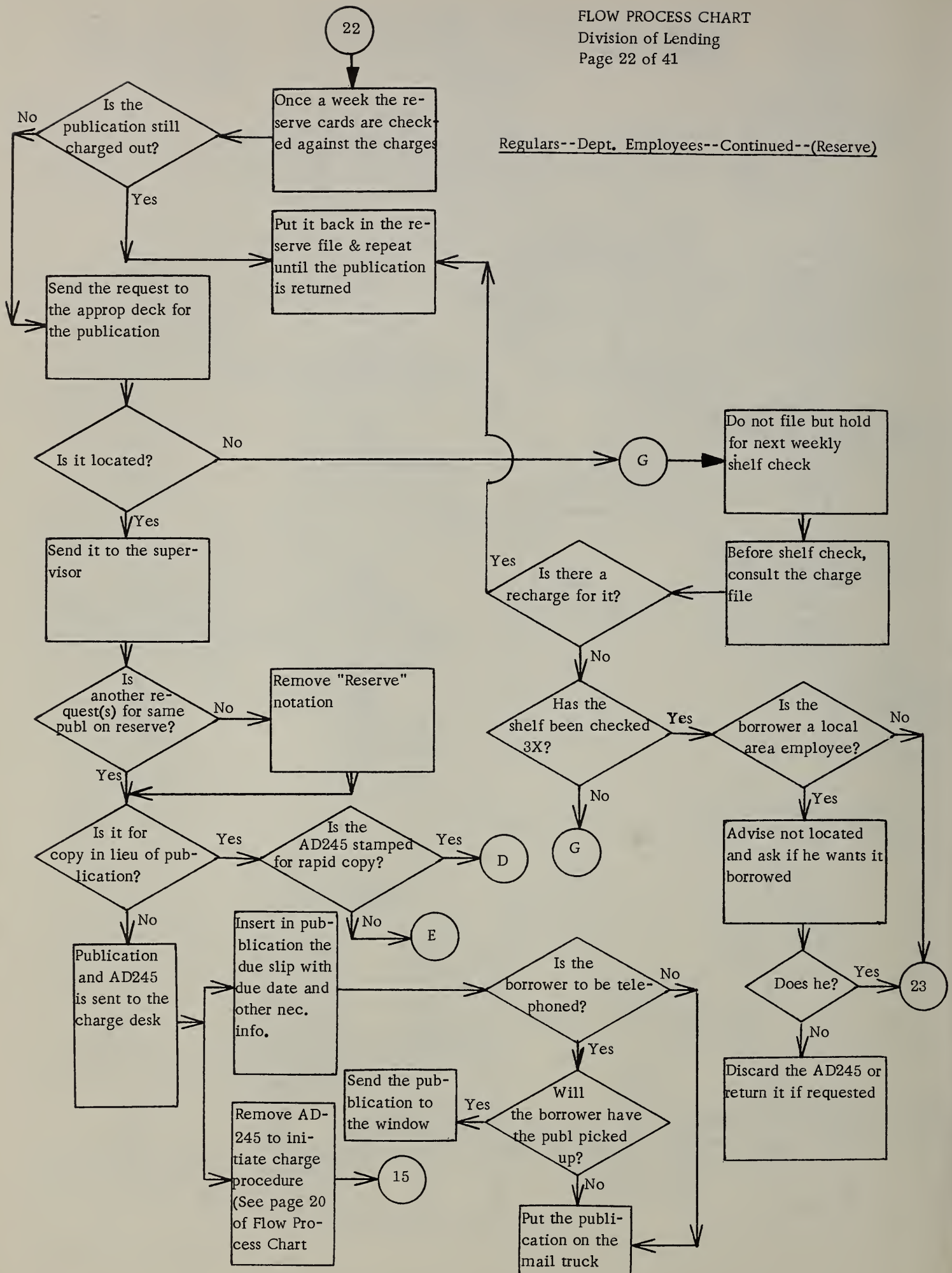
FLOW PROCESS CHART  
Division of Lending  
Page 19 of 41

Charge Procedure--Continued

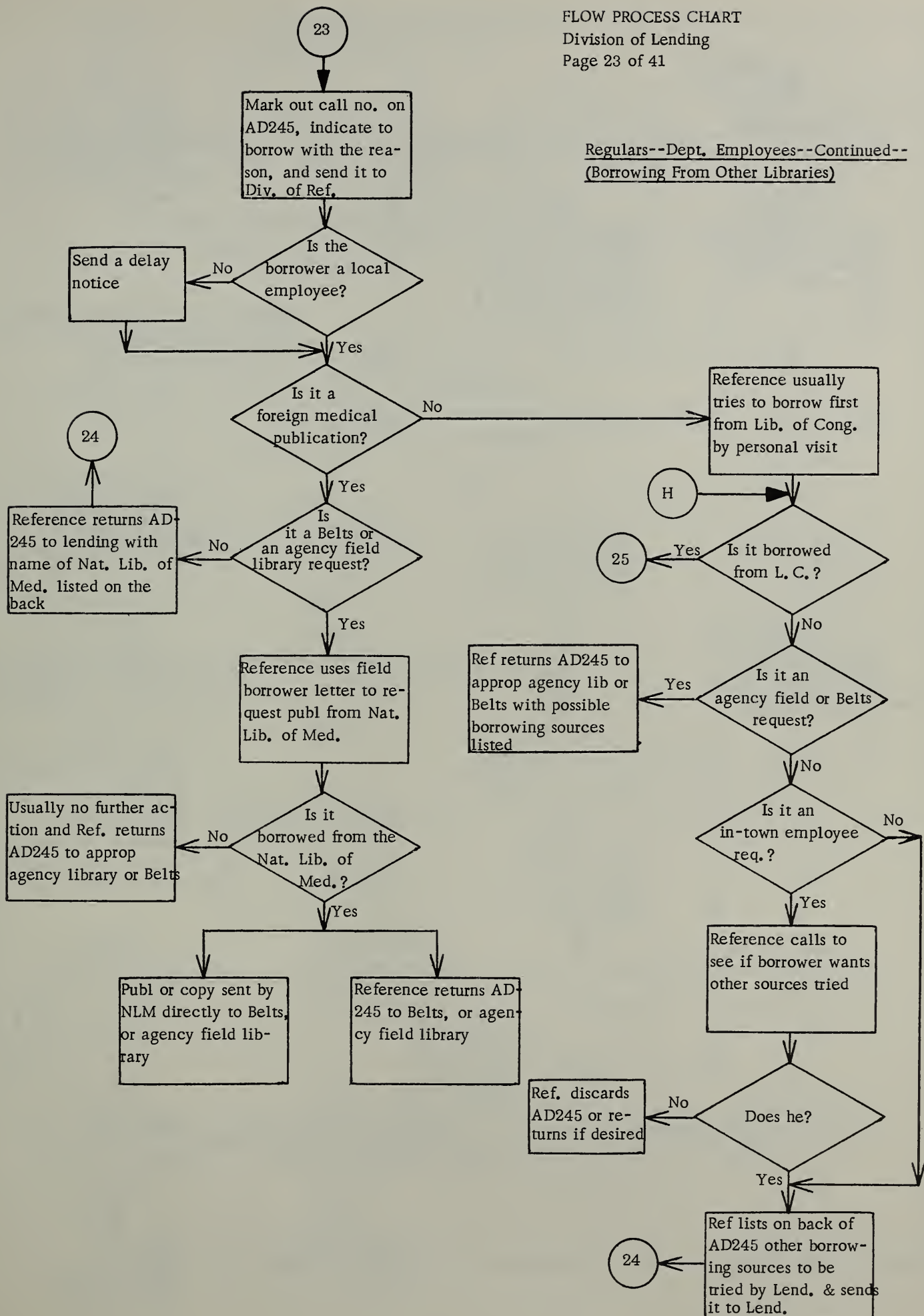


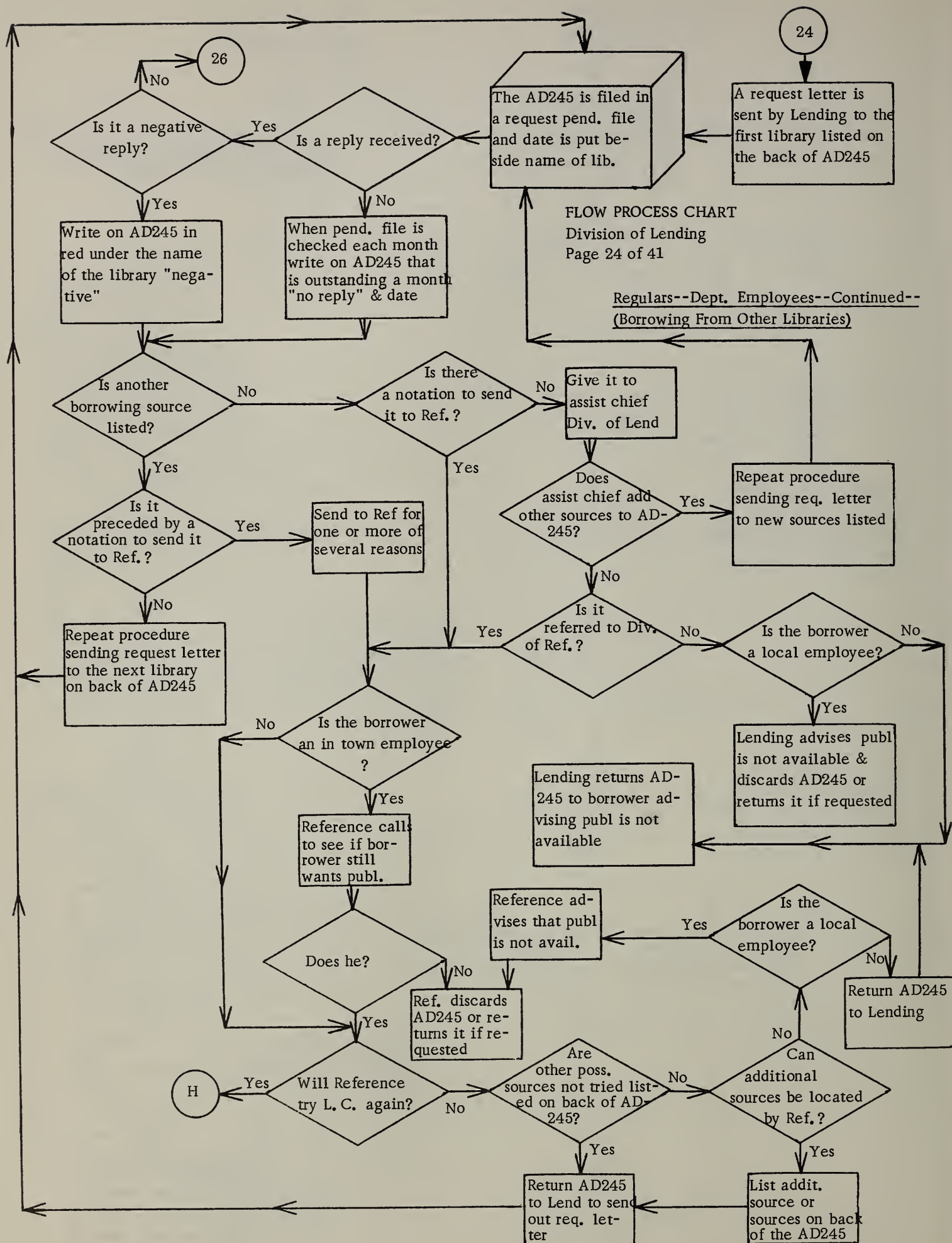






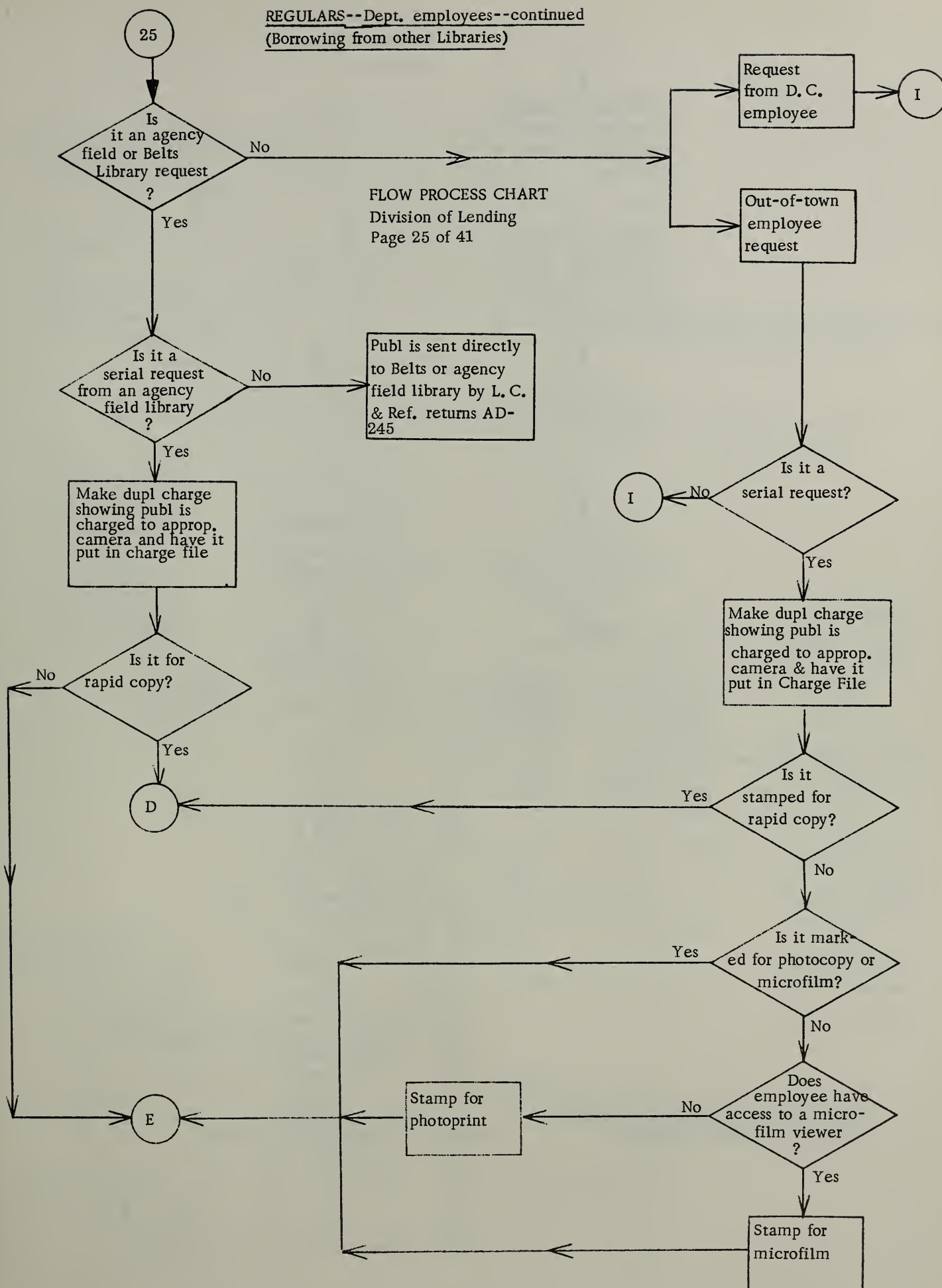
Regulars--Dept. Employees--Continued--  
(Borrowing From Other Libraries)







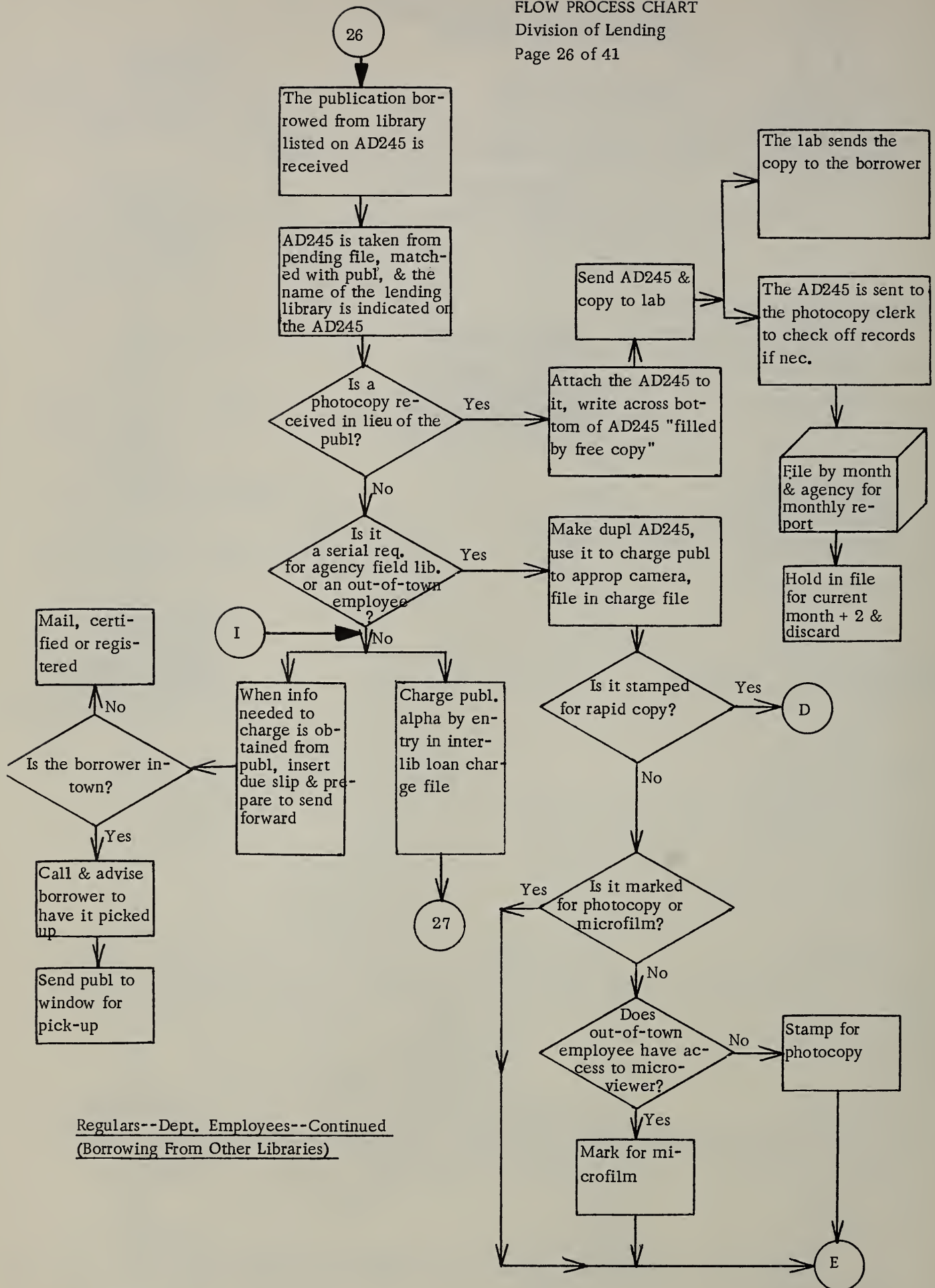
REGULARS--Dept. employees--continued  
(Borrowing from other Libraries)



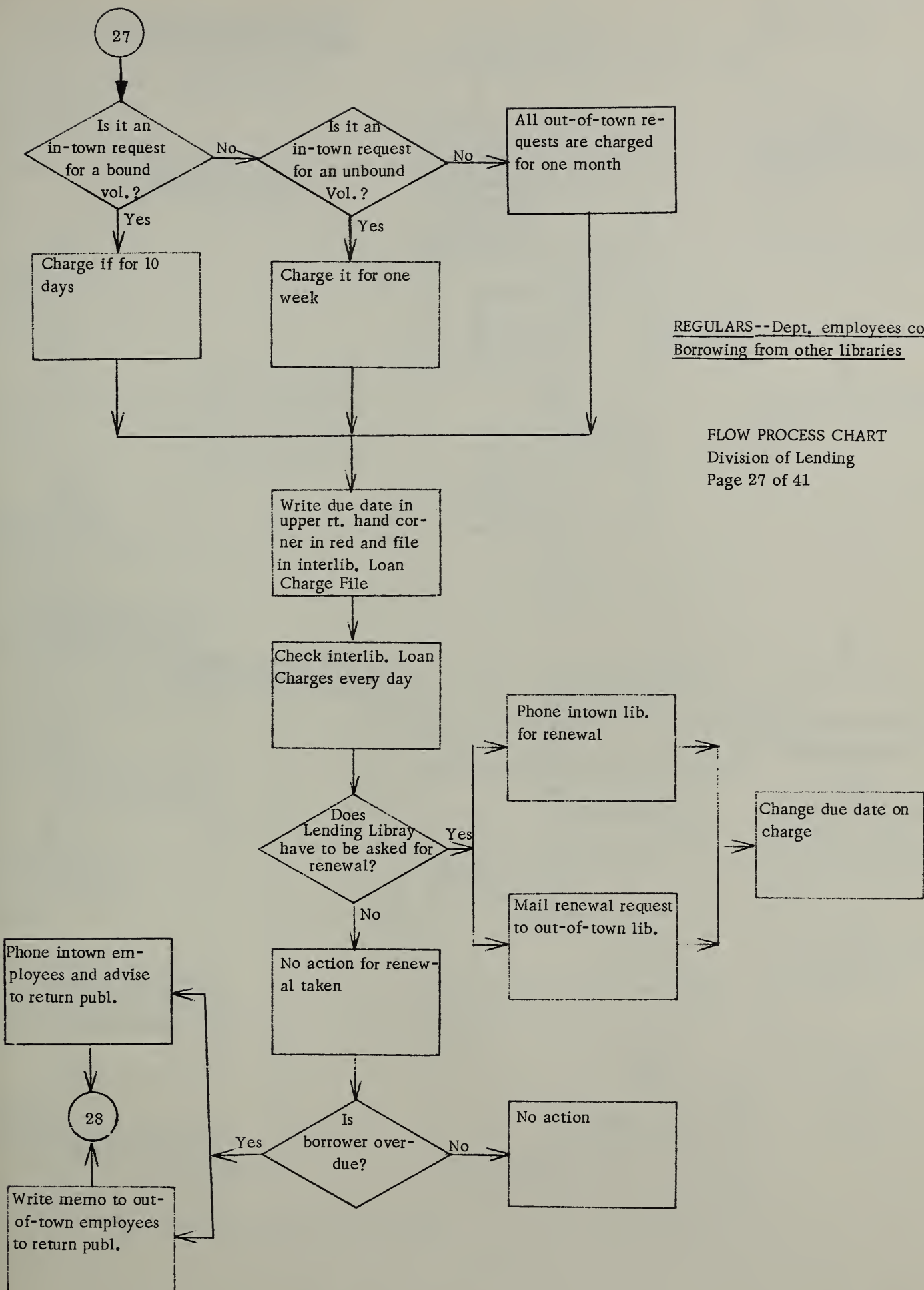
# FLOW PROCESS CHART

Division of Lending

Page 26 of 41



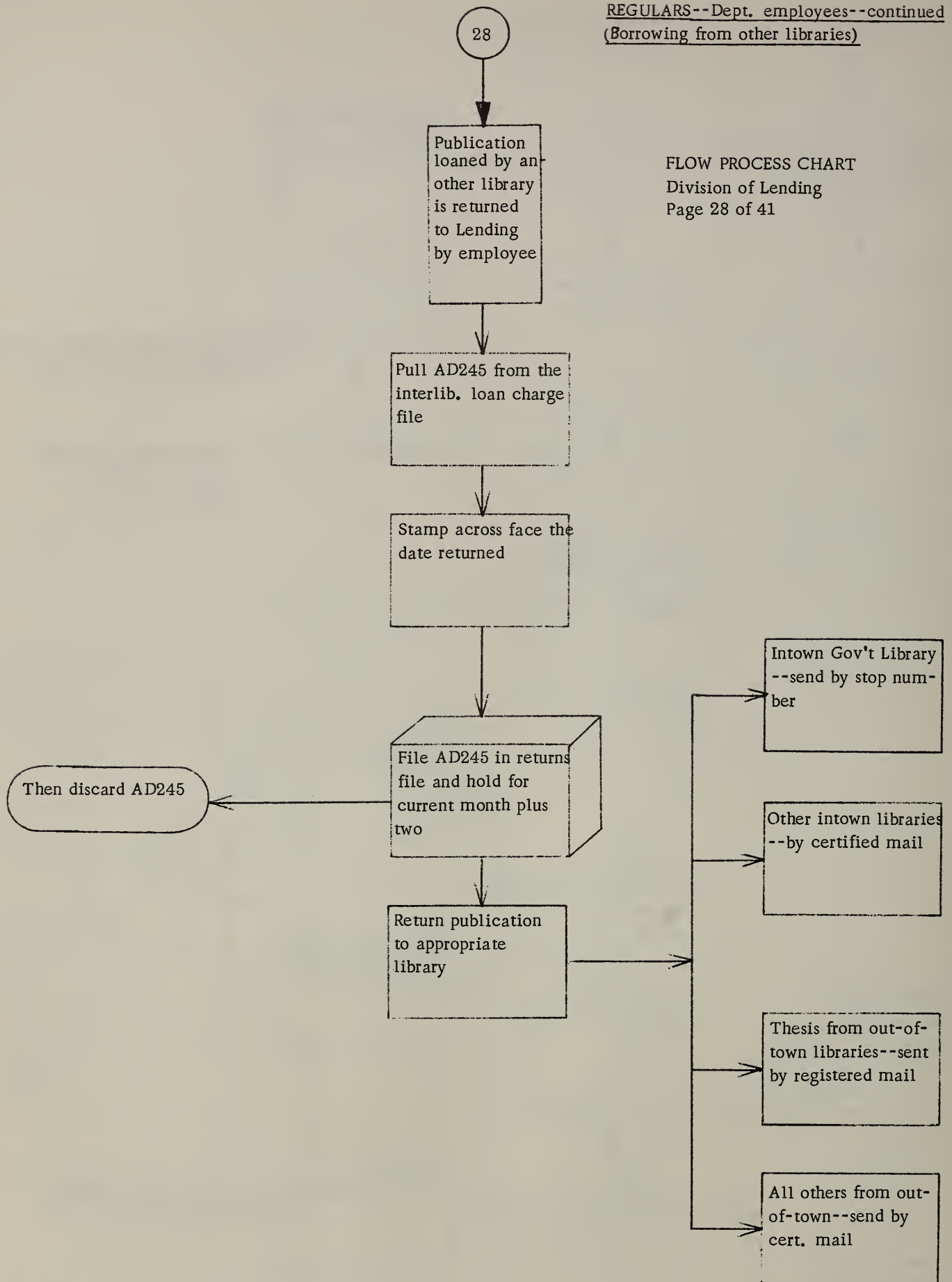
Regulars--Dept. Employees--Continued  
(Borrowing From Other Libraries)



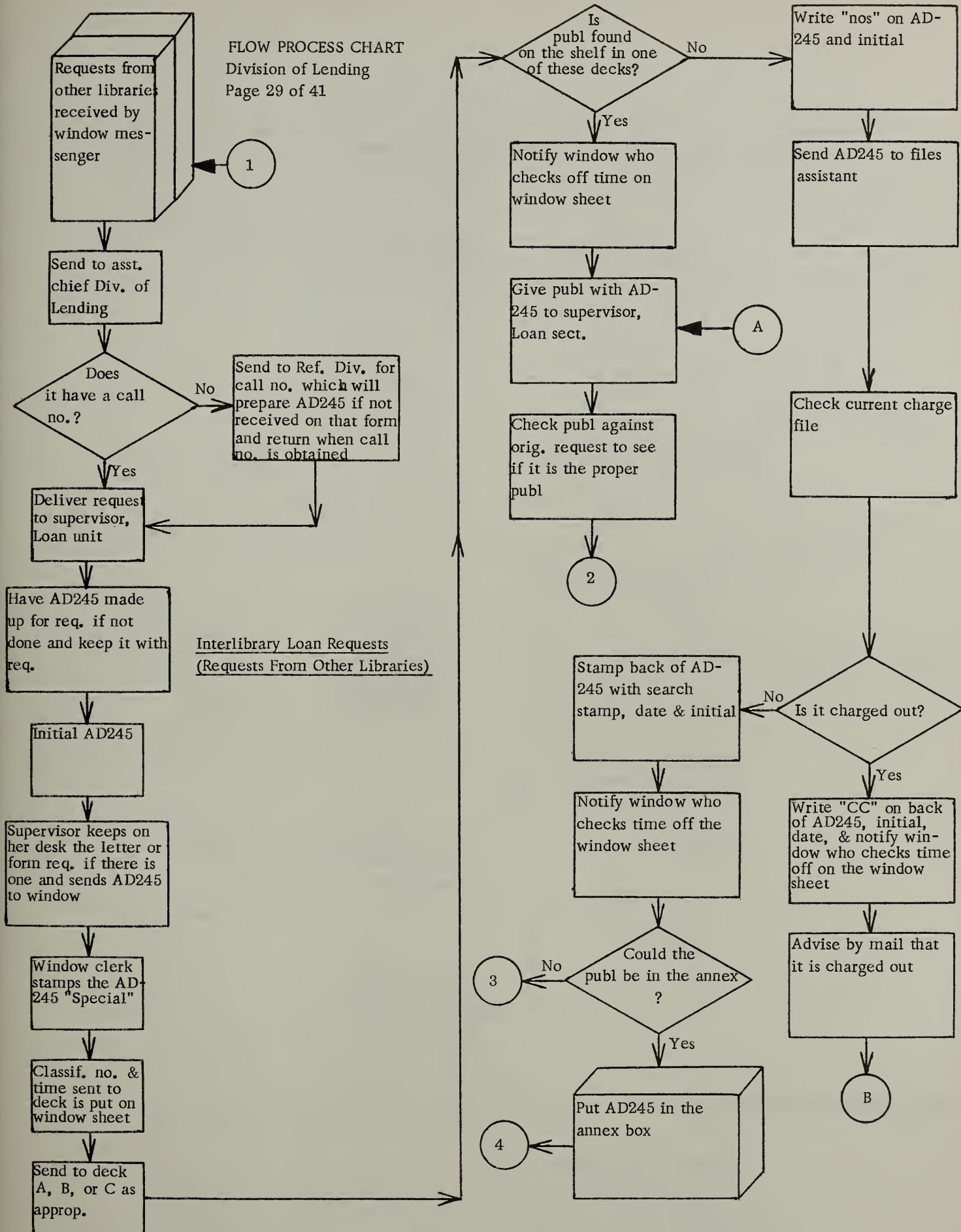
REGULARS--Dept. employees continued  
Borrowing from other libraries

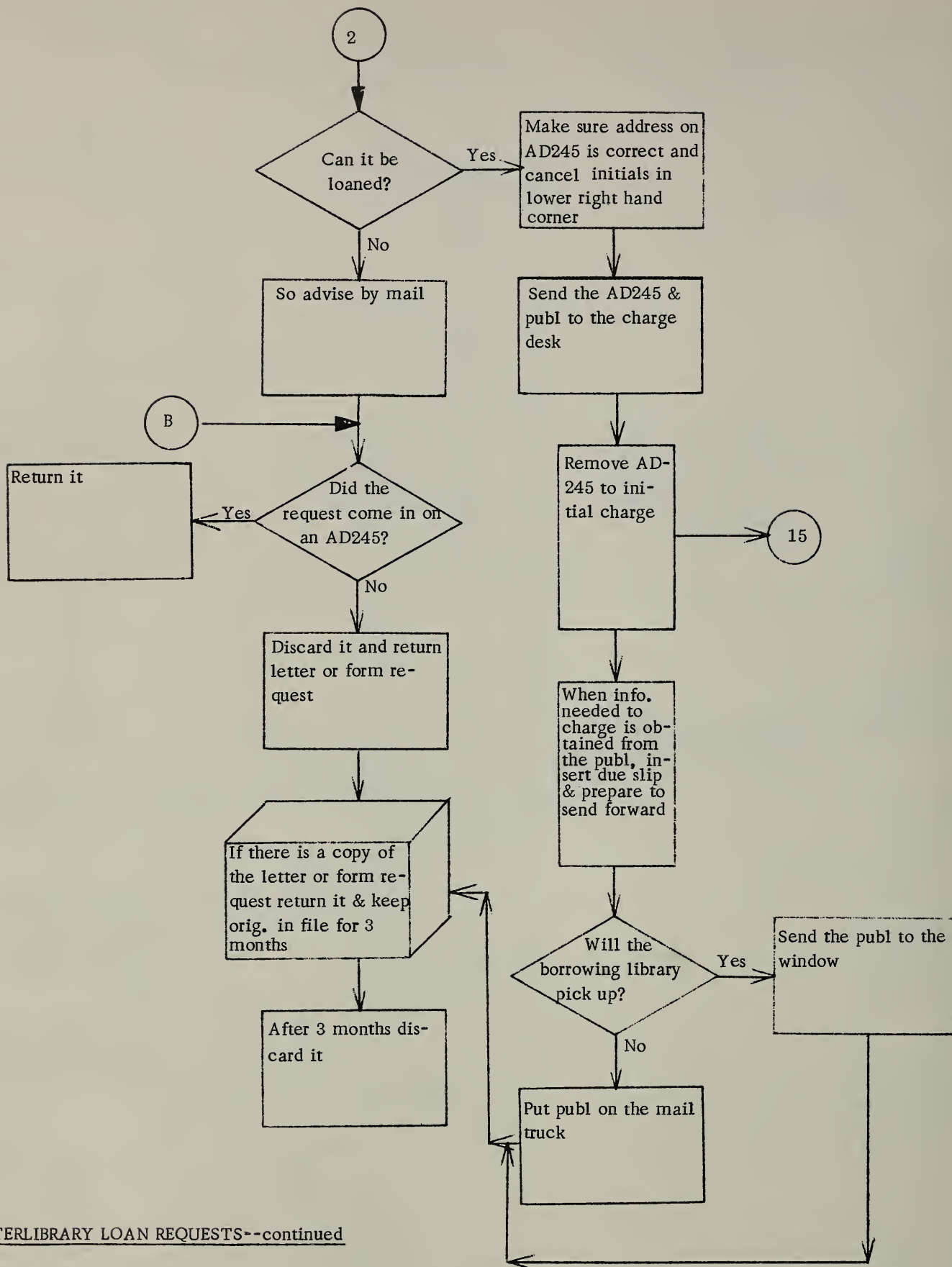
FLOW PROCESS CHART  
Division of Lending  
Page 27 of 41





FLOW PROCESS CHART  
Division of Lending  
Page 29 of 41

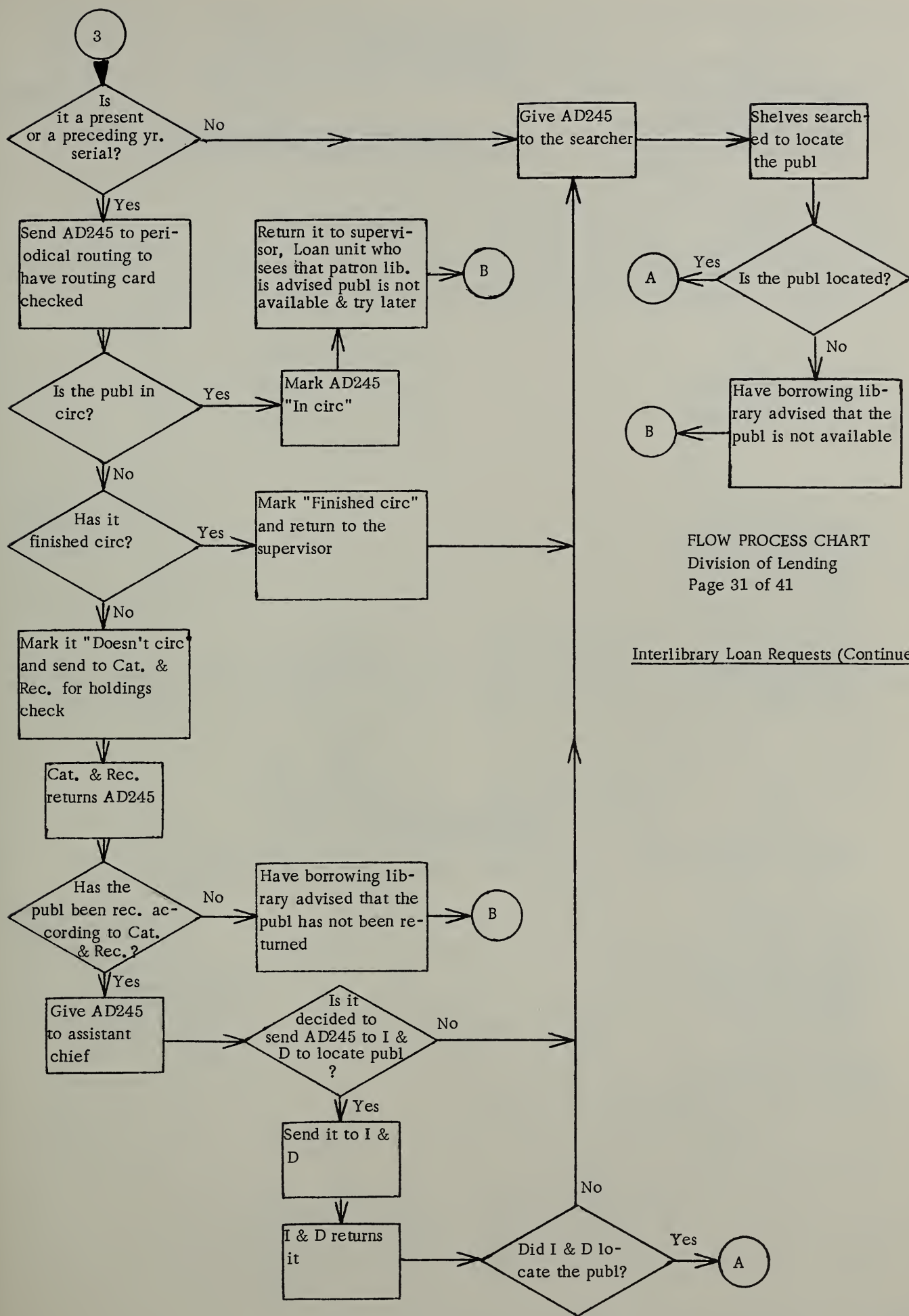




INTERLIBRARY LOAN REQUESTS--continued

FLOW PROCESS CHART  
Division of Lending  
Page 30 of 41

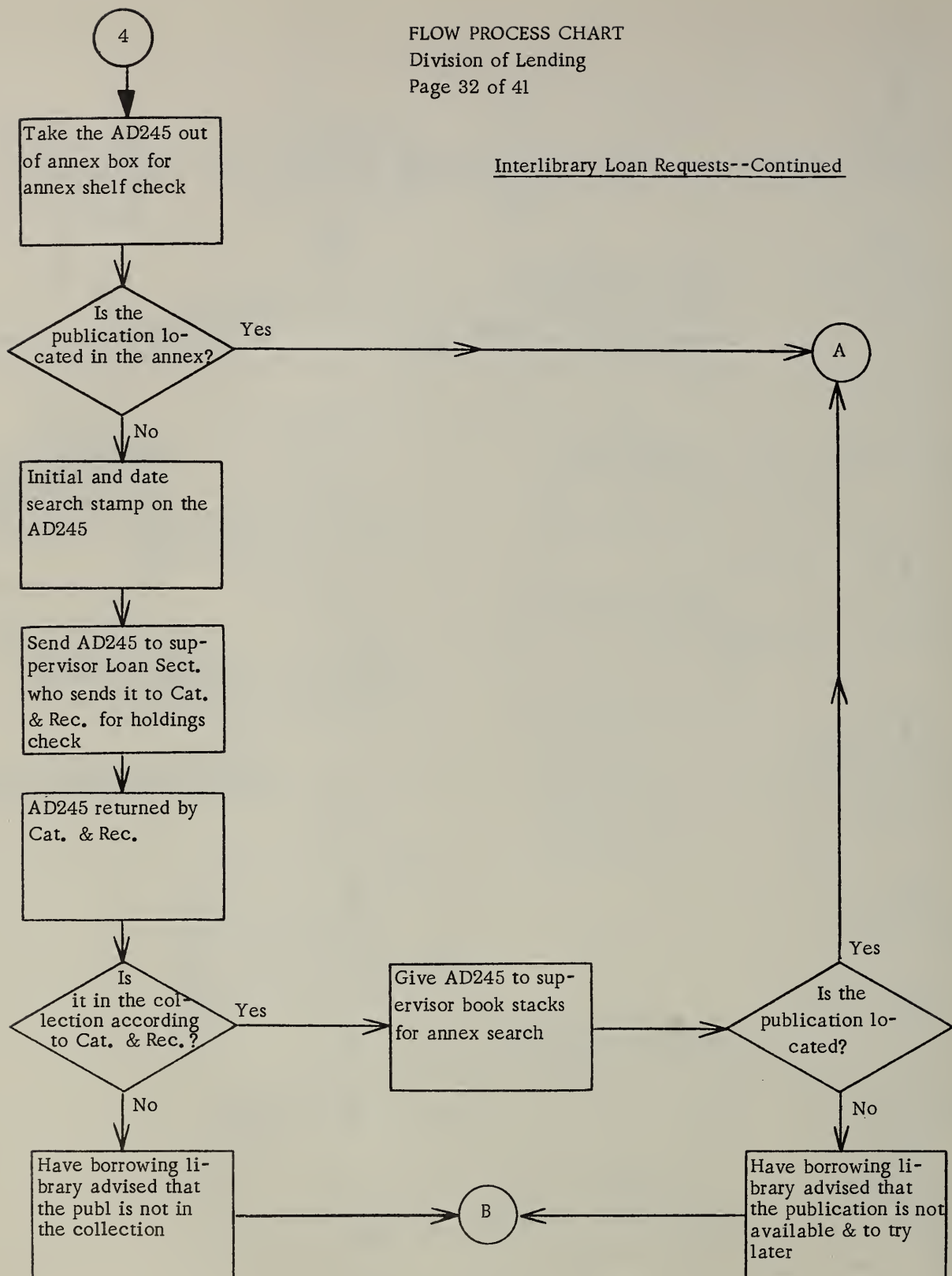




FLOW PROCESS CHART  
Division of Lending  
Page 31 of 41

Interlibrary Loan Requests (Continued)

Interlibrary Loan Requests--Continued



Purchase orders for photocopy are received by the photocopy clerk

\*These initials indicate that when the publication is obtained from the stacks, it is to be sent to the photocopy clerk rather than the lab.

1/This form is attached to a cash order when received by the photocopy clerk.

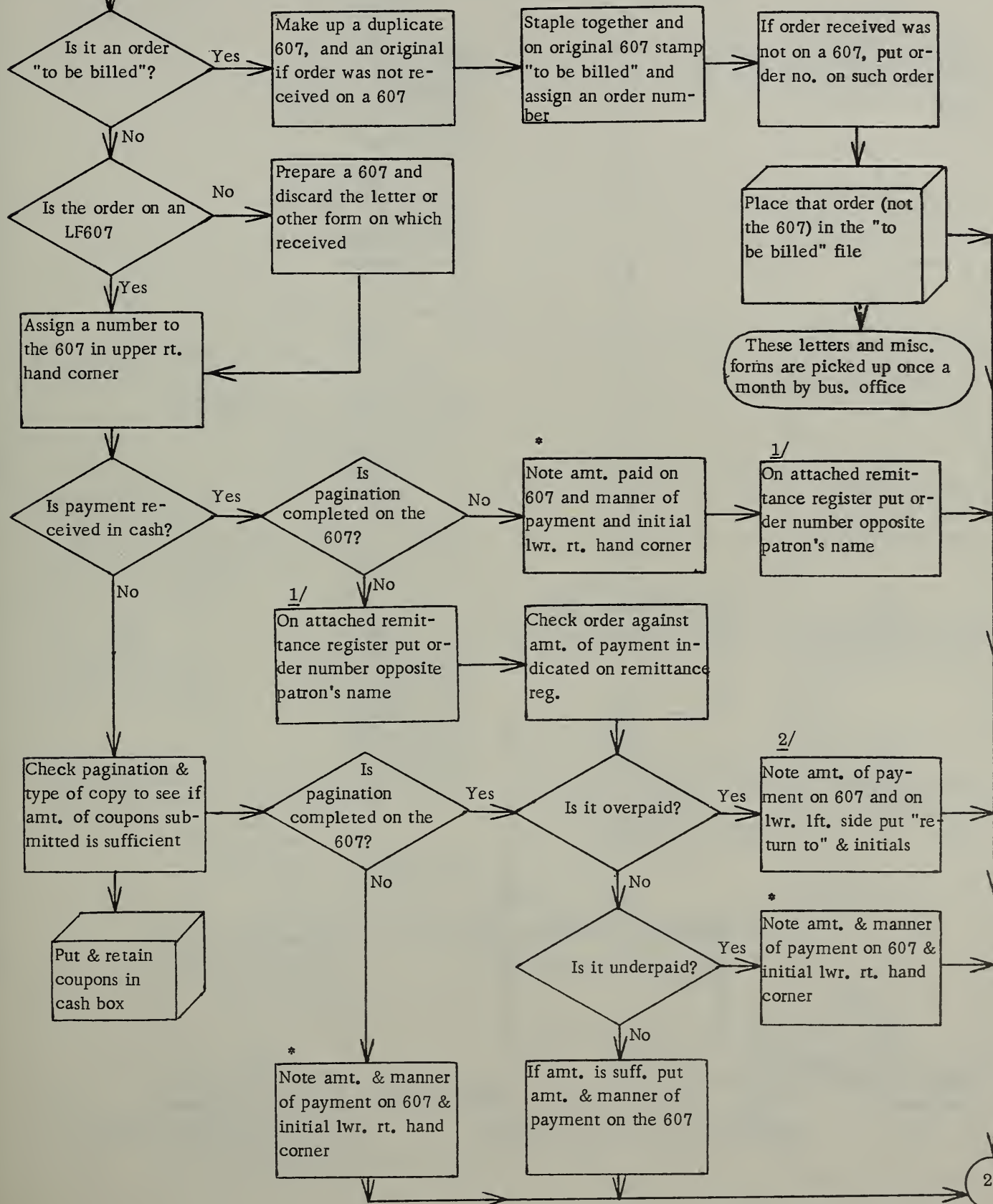
2/This notation notifies the lab to send the photocopy to the photocopy clerk and not to mail it.

# FLOW PROCESS CHART

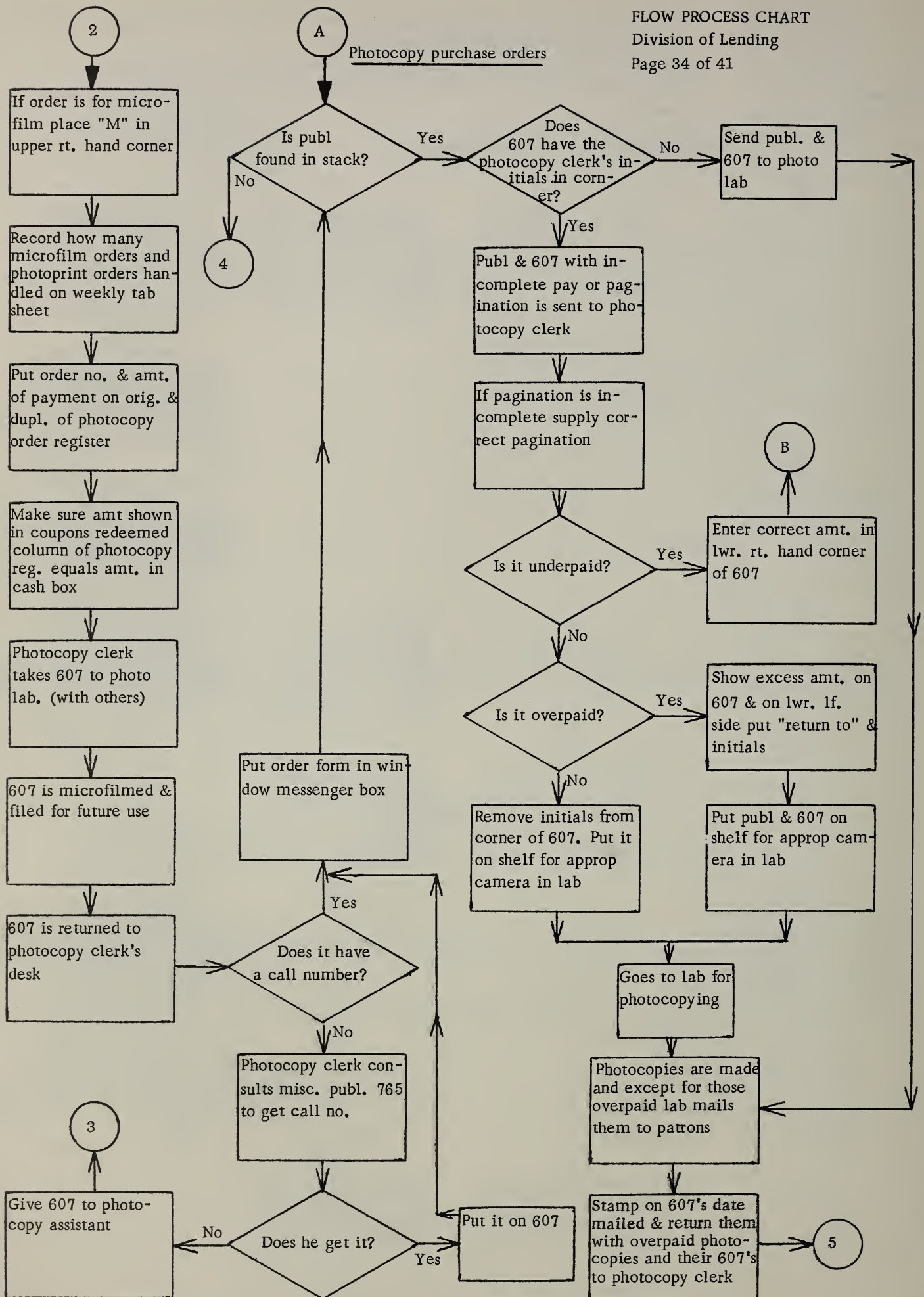
Division of Lending

Page 33 of 41

## Photoduplication - Photocopy Purchase orders





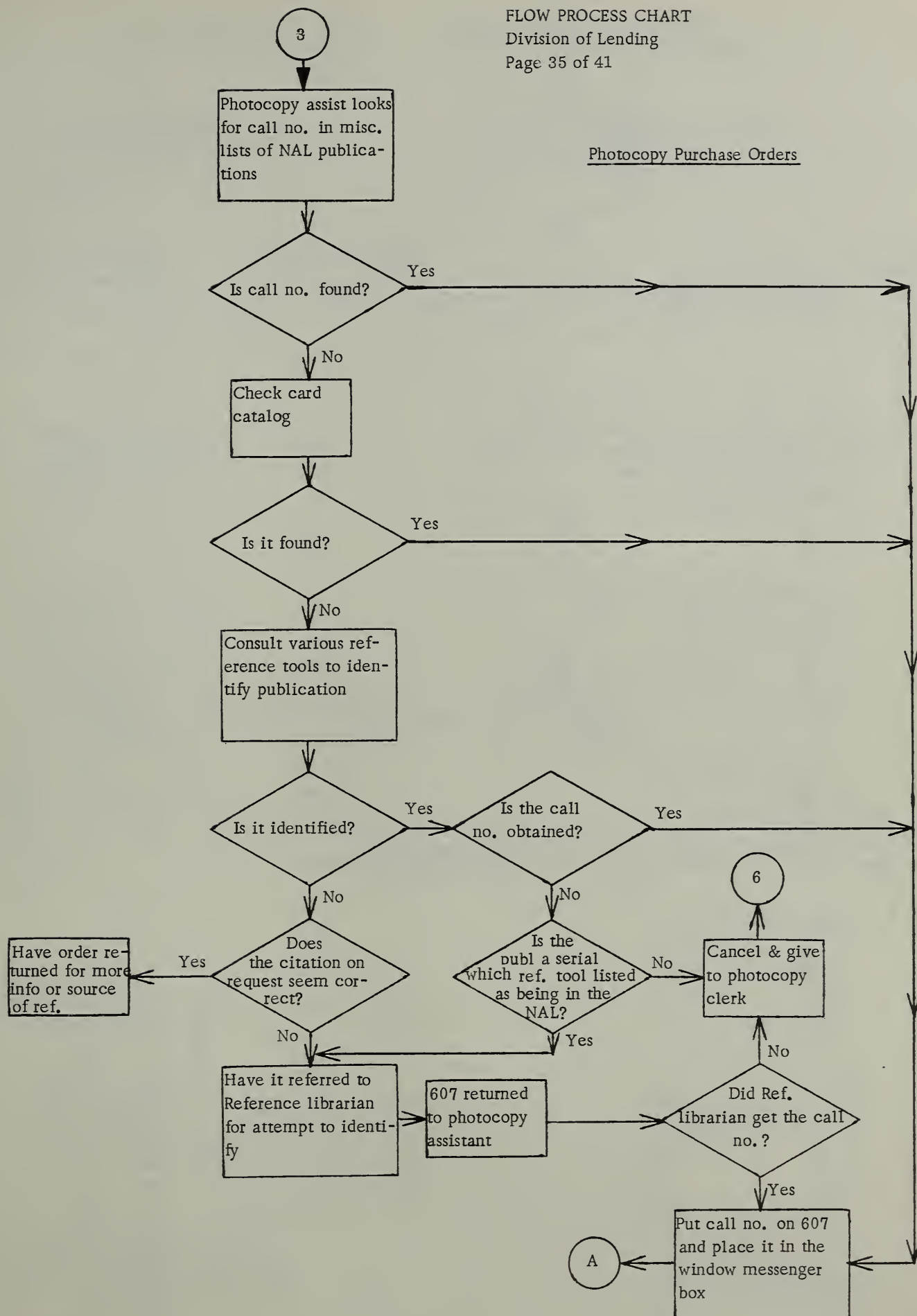


# FLOW PROCESS CHART

Division of Lending

Page 35 of 41

## Photocopy Purchase Orders

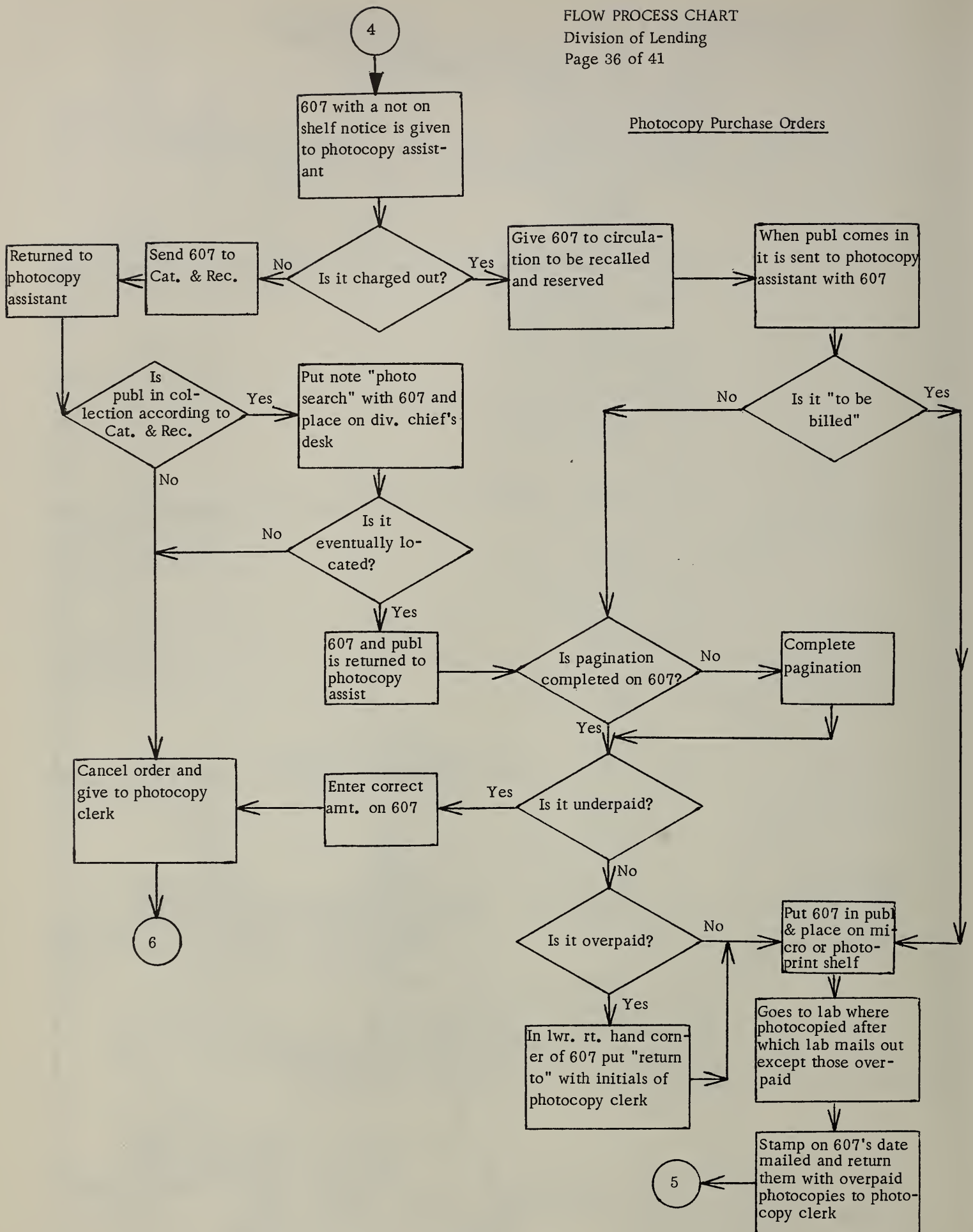


# FLOW PROCESS CHART

Division of Lending

Page 36 of 41

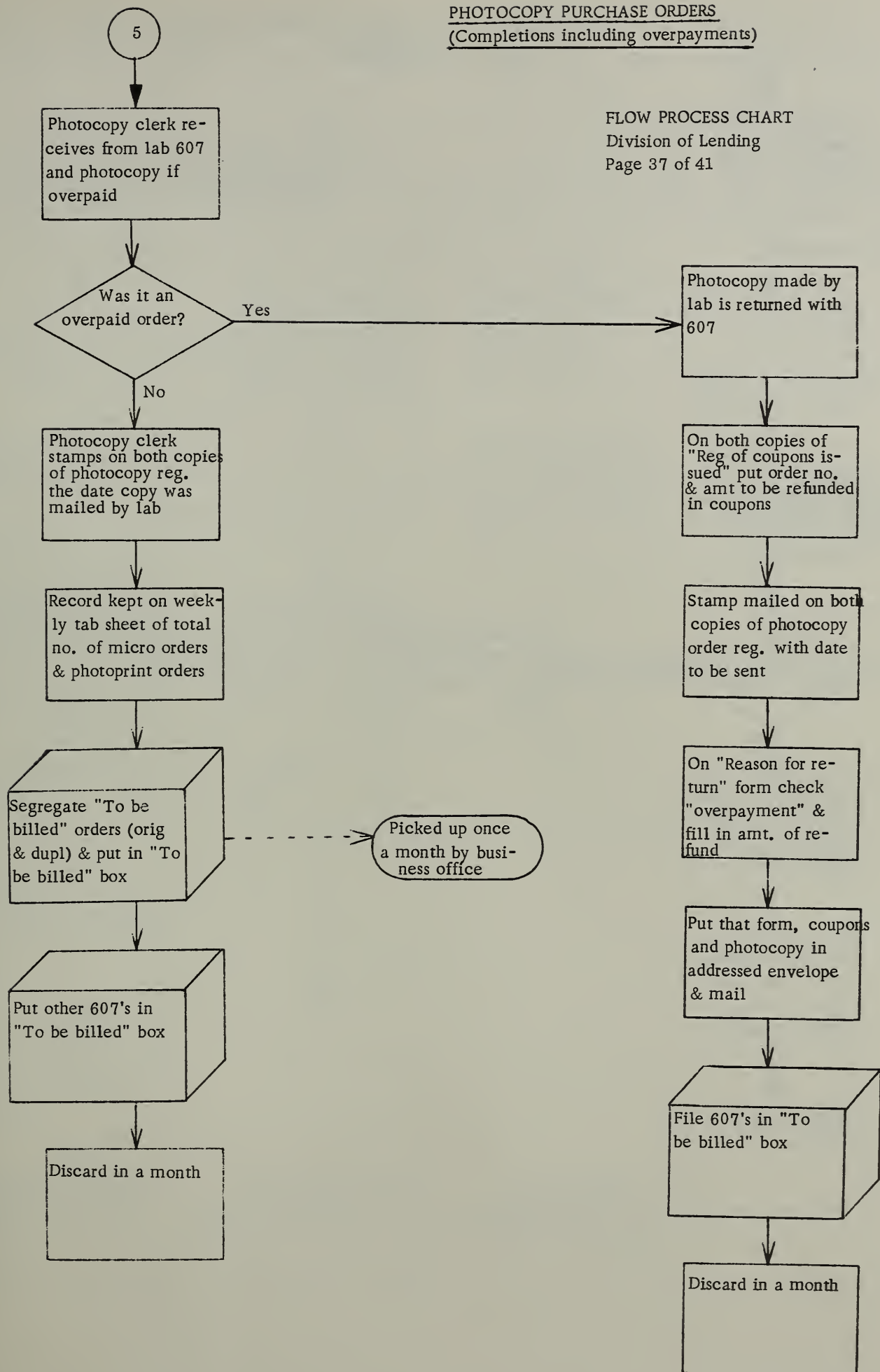
## Photocopy Purchase Orders



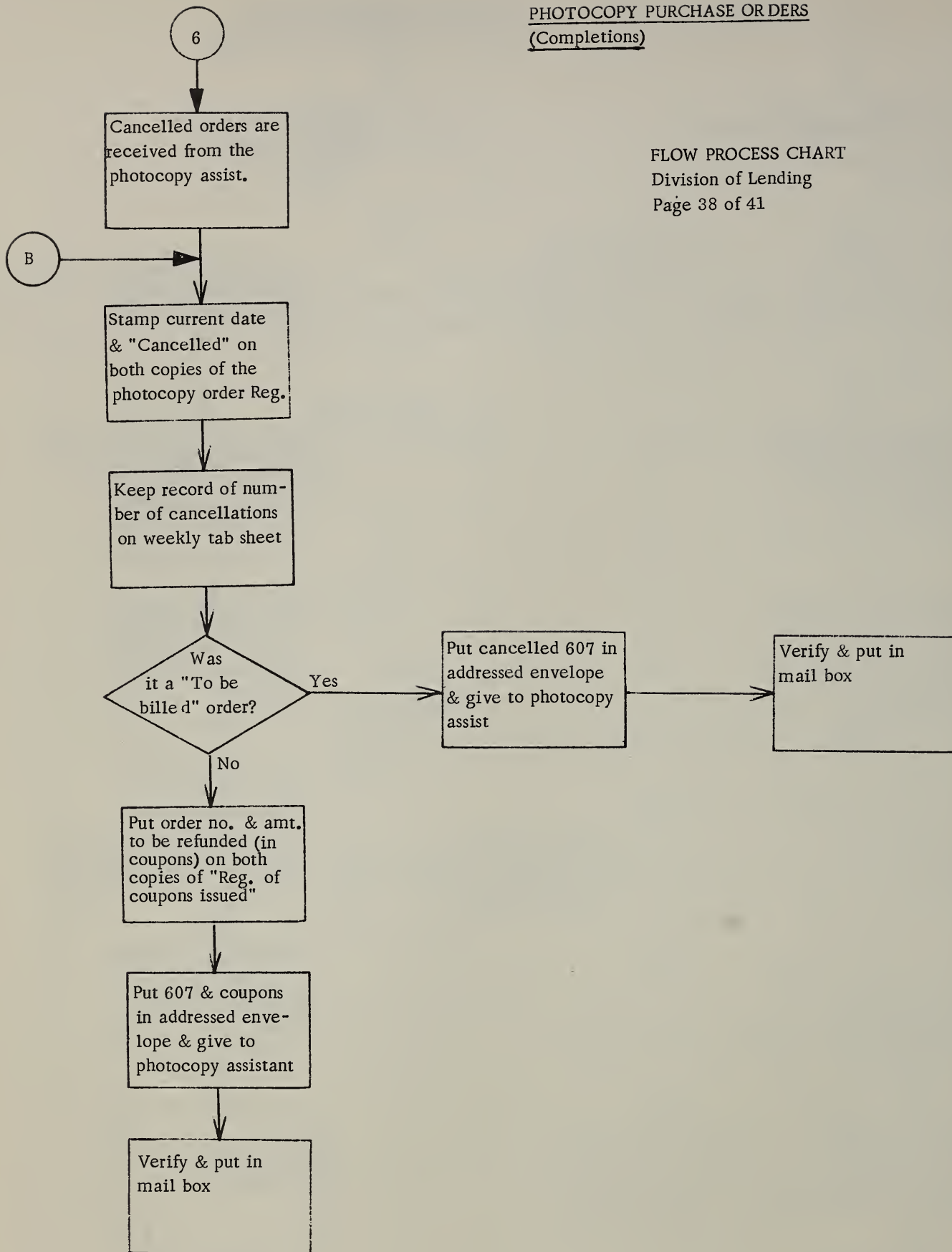


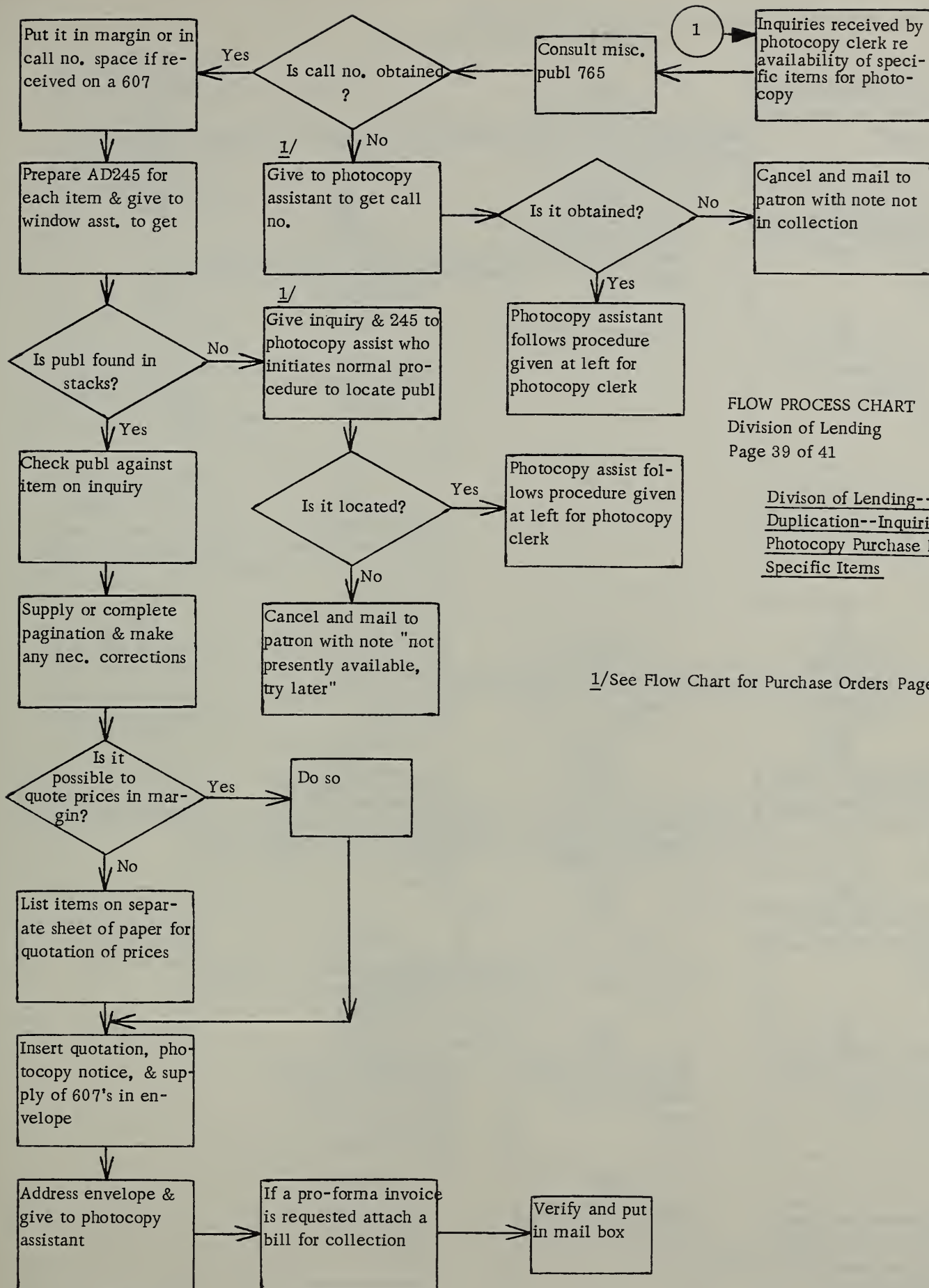
PHOTOCOPY PURCHASE ORDERS  
(Completions including overpayments)

FLOW PROCESS CHART  
Division of Lending  
Page 37 of 41



FLOW PROCESS CHART  
Division of Lending  
Page 38 of 41



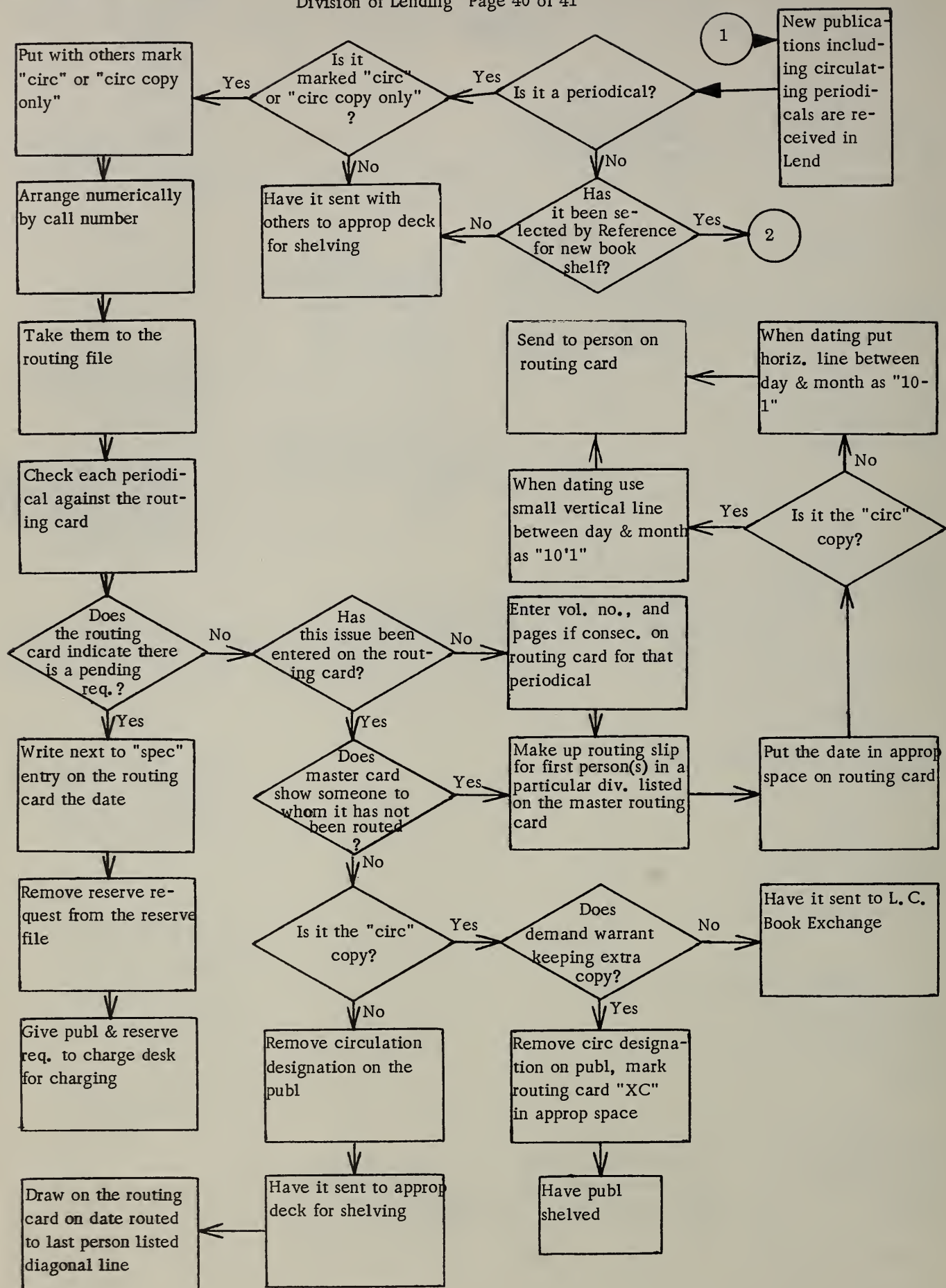


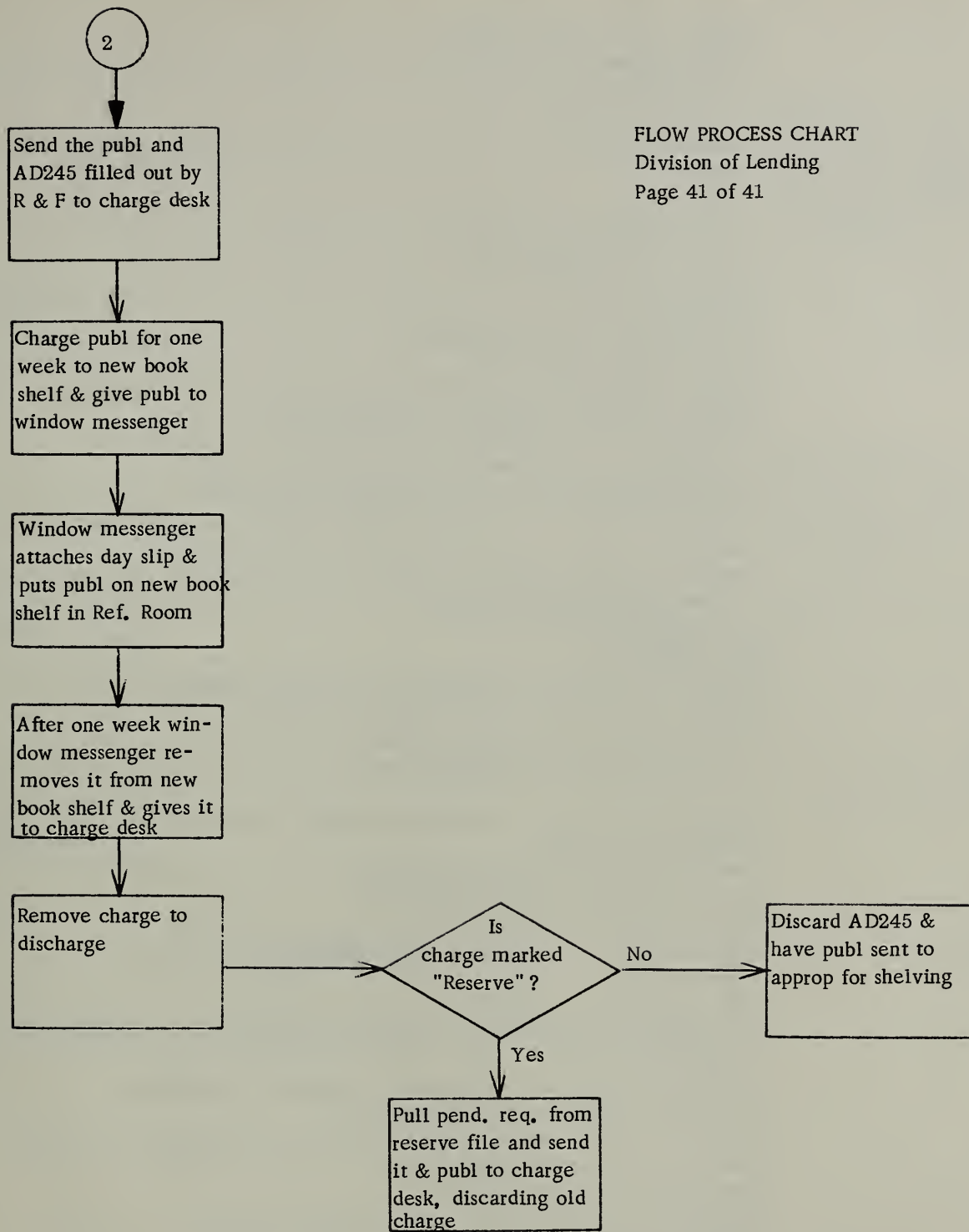
FLOW PROCESS CHART  
Division of Lending  
Page 39 of 41

Division of Lending--Photo  
Duplication--Inquiries Re  
Photocopy Purchase For  
Specific Items

1/See Flow Chart for Purchase Orders Page 33







## FLOW PROCESS CHART

Division of Lending

Page 41 of 41

TERMS USED ON FORM AD-245 TO INDICATE VARIOUS STEPS IN LENDING

Regulars . . . . .	Requests with 24-hour deadline
Specials . . . . .	Requests with 10-minute deadline
N O S . . . . .	Not on the shelves
N C . . . . .	Not charged out
N C C . . . . .	Not currently charged
C C . . . . .	Currently charged
C . . . . .	Charged out
In circ . . . . .	Being circulated
Not circ . . . . .	Not in circulation
Finished circ . . . . .	Final return after circulation
Doesn't circ . . . . .	Not to be circulated
I L A . . . . .	Interlibrary loan
R (preceding call number) . . . . .	Rare Book (from stacks in Annex Bldg.)
Ref. . . . .	Reference Room request
Reserve circ . . . . .	Indicates a periodical not yet received, but expected and will be circulated
RESERVE . . . . .	Request is awaiting availability of requested material
Bindery . . . . .	Publication is withdrawn from circulation for repair or maintenance
Lost Pub. . . . .	Lost publication, awaiting search or replacement
Snag . . . . .	Indicates returned material for which no charge can be found
Dummy . . . . .	An AD-245 placed in the file to show where a book is if not on the shelf
per. . . . .	Periodical
Delay . . . . .	Stamped on AD-245 to indicate requester has been informed of delay in filling his request
Holes punched in bottom of AD-245	Represents one week between holes
Notches in holes . . . . .	Represents overdues
Tel. . . . .	Telephone request
Biblio. . . . .	Publication requested is in Bibliography Division for processing
Special Ref. . . . .	Reference Room material loaned by special permission
Call no. change . . . . .	Calling attention to a correction or revision in call number
Not yet received . . . . .	Used to describe a periodical expected soon
Dates according to placement on card indicate	date requested, charged, due, overdue, renewed, returned, or date of a step in search
Vol. . . . .	Volume of a set or series
Issue number . . . . .	Used for detailed description of publication
Edition number . . . . .	Used for detailed description of publication
Copy number . . . . .	Used to identify the Library's copies of an identical publication
Accession number . . . . .	A number placed on a publication when it is acquired by the Library
N B S . . . . .	New-book Shelf
C & R . . . . .	Catalog and Records, indicating that a pub. is being held for cataloging or recording.
Not in Biblio. . . . .	Used in search to indicate the pub. requested is not included in the <u>Bib. of Agr.</u>
Grad Sc. . . . .	A Graduate School book
Recall . . . . .	A demand for return of a loaned publication needed for photoprinting
Reserved . . . . .	Notice that a publication is being photoprinted
Search . . . . .	Indication that a pub. not on shelf must be traced and its whereabouts determined
Drop . . . . .	Indicates a name is to be dropped from the periodical routing lists
Add . . . . .	Add a name to periodical routing lists
Phone . . . . .	Borrower is to be informed by phone of the status of his request
Rapid . . . . .	Indicating duplication of a publication if 5 pages or under
Photo . . . . .	Indicating duplication if 20 pages or more
OK-EM . . . . .	A stamp used by Asst. Chief, Div. of Lending to indicate that a pub. is approved for photodup.
Check holding . . . . .	Indicates a step in search -- to determine whether a requested publication is in the Holdings Records section of the Division of Catalog and Records
Rush, Return, Send, Hold, Other similar terms	Used frequently on AD-245's in regular library operations, such terms have obvious meanings and serve the same purposes as in all office procedures
Pcs. . . . .	Pieces, with figure, and in upper center of AD-245, indicating number of pieces loaned at one time
R (in lower left-hand corner)	Room charge
G (in lower left-hand corner)	Graduate School charge



DIVISION OF LENDING  
FORMS

CALL NO.		AUTHOR											USDA LIBRARY REQUEST	
		TITLE OF PUBLICATION												
VOL.		No.		PAGES				DATE						
TITLE OF ARTICLE														
NAME										BUREAU				
ADDRESS										TEL. No.				
										ROOM No.				
										TABLE No.				
GPO		16-64438-1		Do not write in this space									AD-245	
1	2	3	4	5	6	7	8	9	10	11	12	13		

AD-245  
Form for describing  
material from Library  
that is requested.  
It becomes the record  
of charge

Another use of AD-245  
Used for reserving  
material which is  
currently charged.

SPECIAL MAY 16 1962

CALL NO.		AUTHOR											USDA LIBRARY REQUEST NOS	
		TITLE OF PUBLICATION												
VOL.		No.		PAGES				DATE						
TITLE OF ARTICLE														
NAME										BUREAU				
ADDRESS										TEL. No.				
										ROOM No.				
										TABLE No.				
GPO		16-64438-1		Do not write in this space									AD-245	
1	2	3	4	5	6	7	8	9	10	11	12	13		

RESERVE

Division of Indexing and Documentation

The work of the Chief of the Division of Indexing and Documentation is divided into the following main parts:

1. Policy. Develops policies and plans for the effective dissemination of agricultural information through issuance of indexes to the literature, and through other systems for documenting published materials.
2. Bibliography of Agriculture. Plans, develops, and compiles the Bibliography of Agriculture, a comprehensive monthly index to the literature in agriculture and its underlying physical and social sciences, and prepares it for publication. Cooperates with specialists in the Department in classifying references and develops subject headings to be used in the index.
3. Special Projects. Provides translation and bibliographic services in special languages to other agencies under contract arrangements. Conducts surveys of current agricultural and related scientific publications in special areas, such as those received from Japan, Taiwan, Mainland China, North and South Korea, with the objective of evaluating and indexing oriental materials now in the library.

This report does not cover policy, but does give a detailed report of the following in three distinct sections:

1. The eleven monthly issues of the Bibliography of Agriculture (January through November). This consists of a classified arrangement of references under the following subjects: (1) Plant Science; (2) Soils and Fertilizers; (3) Forestry; (4) Animal Industry; (5) Entomology; (6) Agricultural Engineering; (7) Agricultural Products; Processing, Distribution, and Statistics; (8) Agricultural Economics and Rural Sociology; (9) Food and Human Nutrition; and (10) Miscellaneous. The classified section is followed by the listing of: (1) New Periodicals and Serials; (2) Translations; (3) USDA Publications; (4) State Agricultural Experiment Station Publications; (5) State Agricultural Extension Service Publications; (6) Food and Agricultural Organization of the UN (FAO) Publications; and (7) Author Index.
2. The December issue of the Bibliography of Agriculture is devoted wholly to a subject index and the cumulated author index to the preceding eleven issues.
3. Special Projects -- A brief report on the special projects now carried on by this division of the National Agricultural Library.  
Note: Since the Annual Index to the Literature of American Economic Entomology was discontinued in March, 1962, no report was submitted on this previous project.

The staff of this division consists of the following personnel at the present time:

<u>Number</u>	<u>Grade Classification</u>	<u>Job Description</u>
1	GS 4	Division Secretary
1	GS 13	Division Chief
(For Bibliography of Agriculture Sect.)		
8	GS 3	Clerk-Typists
1	GS 3	Library Assistant
2	GS 4	Proof Readers
1	GS 5	Proof Reader and Mail Distributor
1	GS 6	Clerical Unit Supervisor
2	GS 9	Bibliographers
8 3/5	GS 11	Bibliographers (one works part-time for other departments)
( For Indexing Oriental Materials Sect.)		
1	GS 4	Secretary
1	GS 7	Bibliographer
1	GS 13	Bibliographer

The personnel of the Bibliography Section all have assigned duties, but they also do other duties to help meet the deadlines created by the publishing of a monthly publication. The division secretary (and even some other secretaries of Library) "help out" as needed and there is no accurate record of the amount of this work done and by whom.

Due to changes of personnel (especially in the last months) and the different rates of speed to accomplish a particular task between different people or even the same person at different times, it was decided to use the "standard rate" for each job where one has been set up. For jobs where no standard has been developed (particularly for the Division Chief, Division Secretary, and Clerical Unit Supervisor ) an average of all available records were used. These standards have been developed over a number of years and agree with the accomplishment of each group over an average year's time. As a whole, the standards are too high where there is a turnover of help and new help has to be trained (typists) and too low where the turnover is slight. Most of the Bibliographers have worked on the Bibliography of Agriculture for 5 to 15 years and exceed their goals by a large margin.

For rates for this report, the 1961 Bibliography was used as a standard. It consisted of 94,302 classified items, listings in the Russian language, and periodicals.

These 94,302 items were considered a normal presentation. It was estimated that there were 188,604 subject matter slips and 122,593 author slips. The estimated time that is taken for 1961 is added to each section at the end of each job description by parenthesis.

In addition to the time reported, there were several miscellaneous jobs in which there was no accurate breakdown of times as was reported as follows: The Division Chief reported only 240 hours of his time in the preparation of the annual edition of the Bibliography of Agriculture. The rest of his time was divided under the three main projects -- Policy, Bibliography of Agriculture, and Special Projects, but no record was kept as to the distribution.

The Clerical Unit Supervisor spends a lot of time on the "make-up" of each issue of the Bibliography of Agriculture. It was estimated about 25 percent of her time was spent on this and the other 75 percent on the supervision and training of personnel.

The Division Secretary spends about 20 percent of her time for each monthly issue on jobs directly connected with the Bibliography of Agriculture (sorting, typing, etc.) and 50 percent of her time during November and December. The rest of her time is spent on correspondence, reports, time reports, etc., either for the Bibliography of Agriculture or Chief of the Division.

#### STATISTICS FOR 1961

Journals received from mail room, 1961 -	111,039
Journals rejected by indexers, 1961 -	83,122
Journals indexed by indexers, 1961 -	26,867
Subject matter cards, 1961 -	188,604
Journals needing abbreviation cards, 1961 -	1,200
Reference cards, 1961 -	94,302
Author slips typed, 1961 -	121,590
Forms to fill out for microfilm, 1961 -	12

#### SECTION I - Bibliography of Agriculture -- 11 Monthly Issues January to November

##### Work Flow

Publications are received directly from the Current Serial Records Station where they have been recorded, (classification code) then placed on the mail table.

##### M 1 - SORT AND DISTRIBUTE:

The mail clerk arranges the publications according to classification number and foreign language by dividing them into seven distinct subject-matter groups. Two of the groups are checked by a reference clerk for articles on Nursery and Seed Trade Catalogs. The remaining publications are delivered to the desk of the appropriate indexer who may further subdivide the group to additional indexers.

Generally, sorting and distributing requires 45 to 90 minutes per day. (Estimated time -- 260 hours).

July 10, 1953

LIBRARY MANUAL: B-5, Part 1, Revised

Subject: BIBLIOGRAPHY OF AGRICULTURE - SCOPE

The Bibliography of Agriculture is an index to the world literature in agriculture and the related sciences received in this Library. For a detailed list of subjects covered, see Library List No. 30 Revised, Classification Scheme of the Bibliography of Agriculture, or the table of contents of any issue.

Since the volume of publications makes it impossible to index completely all publications in this field, certain classes of publications judged of less significance than the others are omitted. Material is omitted on the basis of:

##### I. Date

- A. Publications from the United States and Canada bearing date more than six months earlier than the date of receipt.
- B. Publications from other countries bearing date earlier than one year immediately preceding the month in which they are received.
- C. When new subscription is started, indexing of a weekly is begun with the current issue. Titles appearing less frequently are indexed for the last six months.

##### II. Form

- A. Form of publication
  1. Elementary textbooks.
  2. Courses of study.
  3. Daily newspapers.
  4. Student publications
  5. County farm bureau papers
  6. Statistical and organization reports issued more frequently than annually.
  7. Reprints unless the original is not in the Library.



8. Publications marked "Restricted" or "For administrative use" and publications obviously for internal use.
9. Press releases.
10. Scripts for radio interviews.
11. Forms.

#### B. Form of Article

1. Unsigned articles.
2. Articles signed with pseudonyms, if recognized as such, or initials (A few exceptions are made to this rule.)
3. News articles with date line.
4. Columns.
5. Monthly hints, e. g. "The garden in September".
6. Editorials even if signed.
7. Letters to the editor except those in certain scientific journals where letters are the first announcement of the results of research.
8. Presidential addresses without titles.
9. Prize papers below college level.
10. Interviews except in unusual cases.

### III. Subject

- A. The fur trade after the fur is removed from the animal.
- B. Animals as pets without useful information on care, breeds, etc., e. g. "They can be good for each other", dogs as pets for children.
- C. Experimental physiology and medicine in which horse, dog or other domestic animal is used as an experimental animal, but the disease or condition investigated does not occur naturally in the animal. The fact that research was carried on in a medical school is considered prima facie evidence that the reference falls in this class.
- D. Techniques in selling in retail stores.
- E. Building construction and furniture; limited to materials.
- F. Textiles; limited to the fiber including spinning and treatment of the fiber, but not weaving and finishing.
- G. General references on conservation of natural resources not stressing soil, water, or forest conservation.
- H. Reports of meetings.
- I. Announcements and programs for meetings.
- J. Catalogs of shows.

### IV. Treatment

- A. Popular articles on amateur gardening, horticulture, home processing of food, bee keeping, poultry keeping and rabbit keeping, which are not in any way significant.
- B. Brief notes or hints in popular journals.
- C. Success stories, e. g., "How John Jones makes pullets pay."
- D. Short articles based on personal experience with some particular device or method which is not original, e. g. "My litter is four years old."

### V. Length

- A. In farm papers, articles less than one page.
- B. In other non-scientific journals, articles less than one half page.

### M2 - ANALYZE, CLASSIFY, REFERENCE SLIP, SUBJECT SLIP:

Each of the bibliographers interviewed indexes journals in selected foreign languages in addition to the particular classification which is assigned to them.

The indexers first sort the material to take out the journals not indexed in the Bibliography of Agriculture (decision of the chiefs). Each article contained in those journals which are retained is indexed, provided it falls within the scope of the Bibliography of Agriculture -- See Part B-5, Library Manual, under M-1.

The material is indexed by scanning title, summary, abstract and text. For ambiguous title, or titles needing taxonomic explanation, a brief note is appended. Pertinent data is recorded on 3 x 5 continuous perforated slips (particularly subject index) and sent to the typist for completion of the reference slips. The number of subject index cards can vary from 0 to 100, but average between 2 to 3.

The standard set for indexing is 8 items per hour for English text and 4 items per hour for foreign language. (Estimated time is 16,985 hours.)

### M 3 - TYPING CONTROL STATION

After the indexer has made the proper notation on the publication, reference slip, and subject slip, all of this material is sent to the typing control station. There it is sorted into groups according to classification number and then sorted further into the following groups: (1) Circulating (items that are on a routing list or one displayed in the reference room); (2) books (any item with a catalog card); (3) rush publication (article needed for an immediate request); (4) publication with new abbreviation card (The typist checks all publications with an approved abbreviation card file to see if an approved abbreviation has been set for the particular publication). If not, the publication is sent to the clerical supervisor who makes a card using standards set up for this and

places the material back on the file with the new abbreviation card); and (5) non-circulating publication (all publications not needed for immediate use).

Circulating items, books, publications with new abbreviation cards, and rush publications are given priority and are placed on the circulating file.

Non-circulating items are kept in separate groups in several large files. These are added to the circulating file when help is available to process them. Literature from the United States and Canada not processed within six months after publication (one year for literature received from other countries) is generally not indexed. Exceptions are made for important scientific publications which are published regardless of age.

Fifteen minutes to 1 hour per day is required by one proof reader to accomplish this task. (Estimated time -- 195 hours.)

#### M 4 - ABBREVIATION CARDS FOR PUBLICATIONS THAT NEED THEM:

The following publications need new abbreviation cards: (1) Publications in a series with no catalog card; (2) new publications with new catalog cards; (3) new publications with old issuing offices which do not match the publication - requires a different author than that on the catalog card; (4) composite books made of several authors like symposia; and (5) annual reports that have separate articles that need indexing. The indexer may suggest an abbreviation card, but a proof reader or the clerical unit supervisor checks the regulations and/or various files for the approved abbreviation. If no improved abbreviation is found, one is set up and 3 (or 4) cards are made up and distributed as follows:

- 1 for typist file -- arranged numerically by call number
- 1 for alphabetical file
- 1 for periodical index file
- 1 for Russian file, if Russian publication

On the average, it takes about two hours to make five new reference cards and 1100 to 1500 new alphabetical are needed each year. (The estimated time of 330 hours spent on this project was not enough to keep up with the demand).

#### M 5 - TYPE REFERENCE SLIPS:

Material to be typed is either placed on the typists' desk or taken from the circulating file. It is signed for by the typist and the finished work is taken to the proofreading station at the end of each work day.

The completed citation is placed on the reference slip together with pagination, map notes, etc. The original reference slip made by the typist is used together with notes made on the publication. The reference slips are proofread and returned to the typist for corrections. If more than two corrections are made on a slip, a new slip has to be typed.

The standard for typing the reference slips has been set at 12 per hour which includes all necessary corrections. (Estimated time - 7,858 hours).

#### M 6 - PROOFREAD REFERENCE SLIPS:

All reference slips are checked with the original publication and if corrections are needed the slip is sent to the typist for retyping or correction. All retyping or corrections must be proofread to make sure that all corrections have been made. The circulating and other priority publications are proofread first.

The biological project slips are counted and sent to that project for processing.

The standard for proofreading the reference slip is 35 per hour and this includes the proofreading of all needed corrections. (Estimated time - 2,692 hours for proofreading and 11 hours for counting the biological process slips).

#### M 7 - ARRANGE BY CLASSIFICATION CODE:

After the reference slips are typed, proofread, and any corrections made, the reference cards are arranged by the classification code and placed in the file until the list is closed (date when items are prepared for the "make-up" of the monthly issue).

The standard rate for arranging by classification code is 150 per hour for a proofreader. (Estimated time 629 hours).

#### FILE TEMPORARILY:

#### M 8 - ARRANGE ALPHABETICALLY WITHIN CODES:

After the list is closed, the reference slips are arranged alphabetically within the codes and sent to the indexers.

The standard rate for arranging alphabetically within codes has been set at 150 per hour for a clerk. (Estimated time - 629 hours).

#### M 9 - CHECK REFERENCE SLIPS CLASSIFICATION AND SUBJECT SLIPS

A final reading is made by all bibliographers as an additional check on spelling and typing errors for the reference slips and subject slips and for the classification of the reference slips. In some cases, the lists are checked with specific scientists from the field for an additional classification check. This additional check helps that scientist keep up with the current literature and helps the indexer keep up with current terms and developments in the research field.

The standard rate for checking these items is 25 hours per month for each major section or a group of smaller sections - nine are required. (Estimated time - 2,475 hours).

#### M 10 - INSERT HEADINGS AND CHECK CLASSIFICATION AND ALPHABETIZATION

After the indexer makes the final rating, it is necessary to insert headings and to give a final check to the classification and alphabetization before it is sent to the tearer.

This function is done by a proofreader and/or the clerical unit supervisor and takes from 37 to 53 hours per issue. (Estimated time - 495 hours).

#### M 11 - SEPARATE REFERENCE SLIPS FROM SUBJECT SLIPS

The reference slip has to be separated from the subject slips by a clerk. The standard rate for this separation has been set at 300 per hour. (Estimated time - 314 hours).



#### M 12 - NUMBER REFERENCE SLIPS AND SUBJECT SLIPS

The reference slips and subject slips are numbered by a machine. The reference slips are sent to the typist for making author slips. The subject slips are filed for use in the annual subject index.

The standard rate for numbering main slips is 165 per hour. (Estimated time - 571 hours).

#### FILE SUBJECT SLIPS FOR ANNUAL INDEX

#### M 13 - TYPE AUTHOR SLIP

One slip is made for each author on each reference slip. The finished slips are sent to the proofreader. Cards with any errors are sent to the original typist for corrections.

The standard rate for typing author slips has been set at 130 per hour and this includes the time needed for corrections. (Estimated time - 943 hours).

#### M 14 - PROOFREAD AND SEPARATE REFERENCE SLIPS FROM AUTHOR SLIPS

The proofreader reads the author slips and sends them back to the typist for any needed corrections. A new proofreading is made of all corrections. As they are read, the reference slips are placed in one pile and the author slips are placed in a separate pile.

The standard rate for this proofreading of the author slips and separation of the author slips from the reference slips has been set at 200 per hour. (Estimated time - 472 hours).

#### M 15 - PASTE MAIN SLIPS ON TO MASTER SHEETS

The main slips are pasted on to the Master Sheet. The standard rate for pasting the main slips on to the Master Sheets has been set at five master sheets per hour. (Estimated time - 517 hours.)

#### M 16 - PASTE LISTINGS ON TO MASTER SHEETS

After the classification section, each month's issue of the Bibliography of Agriculture contains a listing of the following:

(1) New Periodicals and Serials' (2) Translations' (3) USDA Publications; (4) State Agricultural Experiment Station Publications; (5) State Agricultural Extension Service Publications; and (6) FAO (Food and Agricultural Organization of the UN) Publications.

Most of these publications are included in the Classified Section and indexed in the author and subject indexes and the slips are made at the time of typing.

There is a lot of time spent on extra sorting of the material, pasting on to the Master Copy, and final proofreading that has not been reported in the other steps. (Estimated time - 200 hours).

#### M 17 - MAIN SLIPS AND LISTINGS MICROFILMED

After the text and listings are pasted on the Master Sheets, this material is sent to the lending department to be microfilmed. The microfilm copy is used as a check as to what the issue contains while the Bibliography of Agriculture is being printed and it would be a complete record in case the Master Sheets should be lost or destroyed by the printer or in transit.

An AD-245 is presented along with the Master Sheets and the Bibliography of Agriculture is charged for the microfilming. On the average, it takes 1 hour each issue to prepare the material from microfilming and check it when it returns. (Estimated time 11 hours).

#### M 18 - SORT OF AUTHOR SLIPS

There are three distinct steps involved in sorting the author slips.

The first sort consists of a clerk dividing the slips into separate piles based on the letter of the alphabet of the first letter of the authors last name. The standard for this first sort is 1000 per hour. On the average, there are 130 author slips for every 100 reference slips. (Estimated time - 128 hours).

The author slips are then completely alphabetized by a clerk. The standard for alphabetization is set at 225 per hour. (Estimated time - 567 hours).

The author slips are checked for accuracy by a proofreader or the clerical unit supervisor. On the average, it took 30 hours time per issue. (Estimated time - 300 hours).

#### M 19 - PASTE AUTHOR SLIPS ON TO MASTER SHEET

The author slips are pasted on to the Master Sheet. The standard rates for pasting the monthly author slips onto the master sheets is set at 1.2 per hour for a clerk. (Estimated time - 298 hours.)

#### M 20 - CONTENTS PAGE AND COVER PREPARED AND HEADINGS TYPED

Every issue of the Bibliography of Agriculture needs a contents page, a changed cover, and the headings typed. This takes a lot of checking and cross-checking to avoid errors. On the average, it takes the clerical unit supervisor or a proofreader 18 hours per issue to complete this. (Estimated time - 198 hours.)

#### M 21 - AUTHOR INDEX MICROFILMED

After the monthly author index is pasted on the Master Sheet it is sent to be microfilmed. This microfilming is done for the same reason and in the same way as described for the Main Slips and Listings Microfilmed. (Estimated time - 11 hours a year).

#### M 22 - FINAL CHECKING OF COPY SENT TO PRINTER

A final check is made of the completed copy of the Bibliography of Agriculture before it is sent to the printer. This final check is made by the clerical unit supervisor and takes about 6 hours per issue. (Estimated time - 66 hours).

SEND TO PRINTER

#### M 23 - DISPOSITION OF MASTER SHEETS FROM PRINTERS

(1) The author slips are stripped from the Master Sheets and used for the Annual Index.



(3) Certain Master Sheets for the main items (reference slips) are sent to the departments that have requested them. The balance of the Master Sheets are discarded.

The following are schedules of work in June and July 1961, required to prepare the August, 1961, issue of the Bibliography of Agriculture. This shows the different steps involved in the preparation of one issue.

Approximately 8202 items

August 1961	SCHEDULE FOR Bibliography of Agriculture	Vol. 25, No. 8
June 30	List closed.	
July 14	Tearing to begin.	
July 17	Numbering to begin.	
July 25	Numbering completed.	
July 26	Authors typed, proofread, and thrown.	
July 27	Authors arranged	
July 28	Authors checked	
July 31		
Aug. 1, 2, 3, 4	Authors pasted.	
Aug. 4	Copy completed.	

#### STEPS IN PREPARING THE AUGUST ISSUE

June 30	1. List closed.
	2. List alphabetized.
	3. List to Bibliographers, reviewed.
	4. Rewrites to typists.
	5. Rewrites returned to Bibliographers.
July 14	6. List to Supervisor of Unit.
	7. List checked.
	8. List torn.
July 17	9. List numbered.
	10. Slips separated as numbered. First group--main slips, Second group--subject slips
	11. Authors typed from main slips. (According to Typing Control Sheet)
	12. Authors proofread from main slips. (According to Typing Control)
	13. Authors corrected; Main slips ready to paste.
July 26	14. Main slips pasted.
	15. Authors thrown.
	16. Text microfilmed.
July 27	17. Authors measured. Control sheet made.
July 28	18. Authors arranged.
	19. Authors checked.
July 30-Aug. 1-4	20. Authors pasted. Author index microfilmed.
	21. Contents page, cover, headings typed.
Aug. 4	22. Final checking. Copy ready for printer.
	23. Subjects thrown.
	24. Subjects measured. Control sheet made.
	25. Subjects arranged.
	26. Subjects interfiled.
Aug. 21	27. Master sheets returned from printer.
	28. Authors stripped.
	29. Authors reversed.
	30. Authors interfiled.
	31. Certain master sheets are sent to Mr. Warren Shaw, U.S. Agricultural Research Service, Weed Investigations Section of Plant Industry Station, Beltsville.
	32. Other master sheets are sent to Mr. Lawrence Sarbaugh, Office of Information, U.S.D.A.
	33. Translations are stripped and saved for the Cumulated Translation List.
	34. Other sheets are discarded.

A brief outline of the duties of the different personnel working on the Bibliography of Agriculture follows:

I. BIBLIOGRAPHER

1. Publications arrive in Bibliography of Agriculture Section.
2. Publications are sorted into groups by call number; then distributed to Bibliographers.
3. Bibliographers sort publications into groups. (1) Publications to be indexed; (2) Publications to be omitted.
4. Bibliographers scan publications for articles to be indexed.
5. Articles are indexed.

II. TYPING CONTROL STATION

1. Publications are sorted into groups by call number.
2. Then by groups - Circulating, Books, Rush Publications; Publications with abbreviation cards; Non-circulating publications.
3. Circulating items, Books, Publications with new abbreviation cards, and Rush publications are given priority and are placed on top of each group.
4. Non-circulating items are kept in separate groups according to date indexed.
5. Typing Control Sheet is marked for groups in which there are no publications on a given date.

III. TYPIST

1. Typist signs for each group taken.
2. Typist types items. Keeps record of periodicals and number of items typed.
3. Takes work to Proofreading Station at End of Work Day.
4. Takes 3 x 5 slip with record of days typing to Supervisor.

IV. PROOFREADER

1. Proofreader reads circulating and other priority publications first.
2. Keeps record of periodicals, number of items read, separate record of Russian and Checked items, Single checklist items.
3. Takes 3 x 5 slip with record of days Proofreading to Supervisor.
4. Takes Correct items to Sorting and Counting Station.
5. Returns incorrect items to typist responsible for rewriting.

V. SORTING AND COUNTING STATION

1. Clerk sorts and counts items. Sorts on 1st letter of classification; then on rest of classification. Records number of items on slip located at Supervisor's desk. This record is useful in closing list.
2. Clerk puts counted and sorted slips into file drawers until issue is closed. Sorting and counting is done regularly every few days, and daily at end of month.
3. List is closed before the 6th. Schedule is made for next list, and we start all over again.

TYPING CONTROL SHEET

1. Publications are sorted into groups by call number.  
Then in groups - Circulating publications, Books, Rush publications, Publications with new abbreviation cards, Non-circulating, Circulating items, Books, Publications with new abbreviation cards, and Rush publications are given priority and are placed on top of each group. Non-circulating items are kept in separate groups according to date indexed. Typing Control Sheet is marked for groups in which there are no publications on a given date.
2. Typist signs for each group taken. She also takes the file of abbreviations for each group. All circulating and other priority publications are done before the Non-circulating, and the oldest Non-circulating is done first.
3. Typist keeps record of number of items typed, and the number of periodicals. This information is recorded at end of each work day on a 3 x 5 slip and is given to the Supervisor for the Daily Summary Sheet.  
Typist also keeps record of each miscellaneous activity and amount of time spent on each. This information is recorded daily on the Typist Form. Separate time is kept for corrections and List rewrites. This form is given to the Supervisor at the end of the reporting period, which is the 5th. The form is used as a basis for a monthly report, which computes the averages of the typists.
4. Proofreaders record number of items proofread, and the number of periodicals, with a separate count for the number of Russian and Checked slips, and Single checklist slips. This information is given to the Supervisor daily for the Daily Summary Sheet.

The Daily summary sheet is useful in many ways, and especially in adjusting the activities of the Section. It is known how many items have been typed for the next issue; how much of a backlog of items to be proofread; how many Russian items and Checked items are at Special Project; how many items are available for routing to the Special Project.

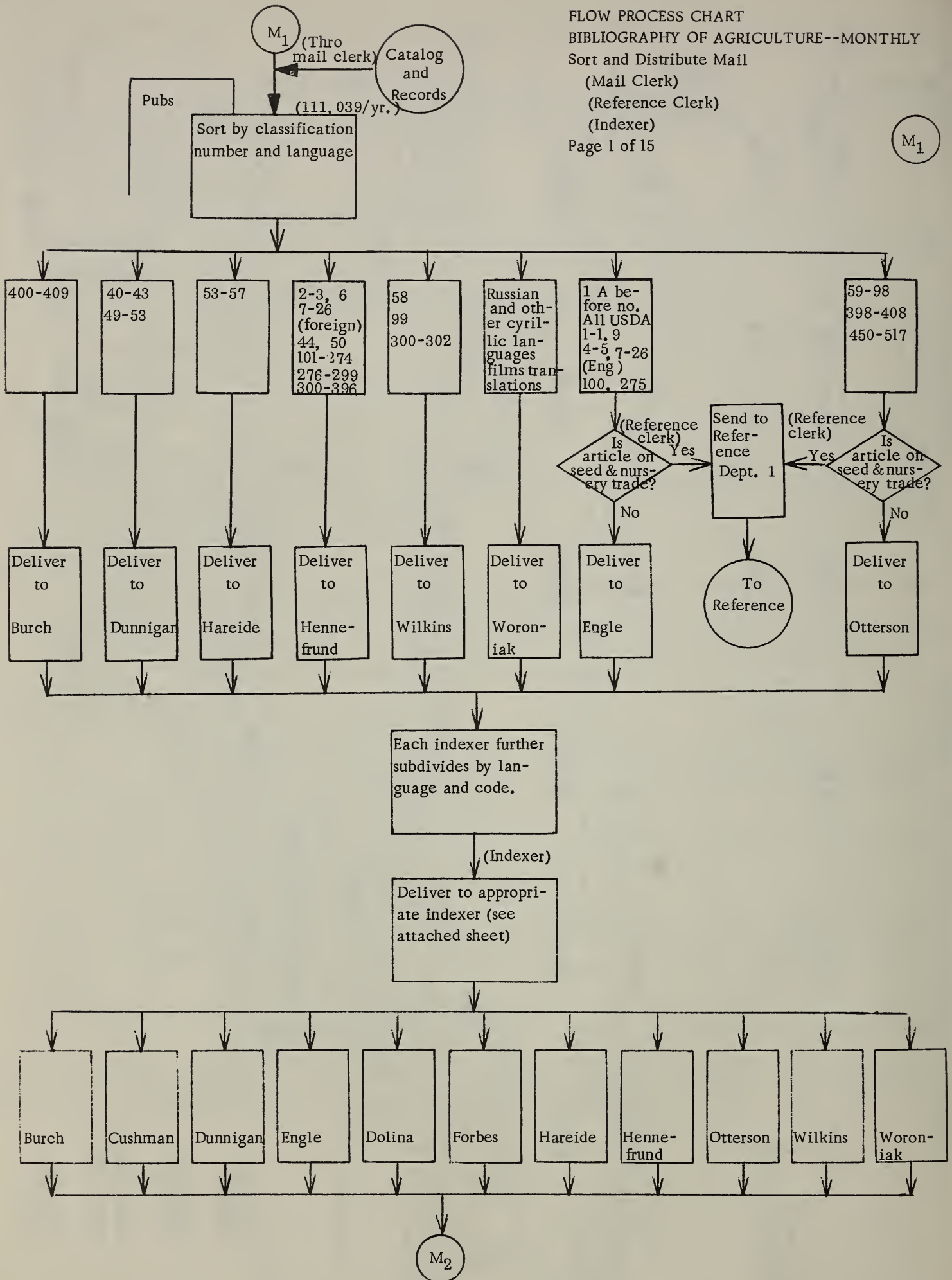


## To Circulation via Mail Table

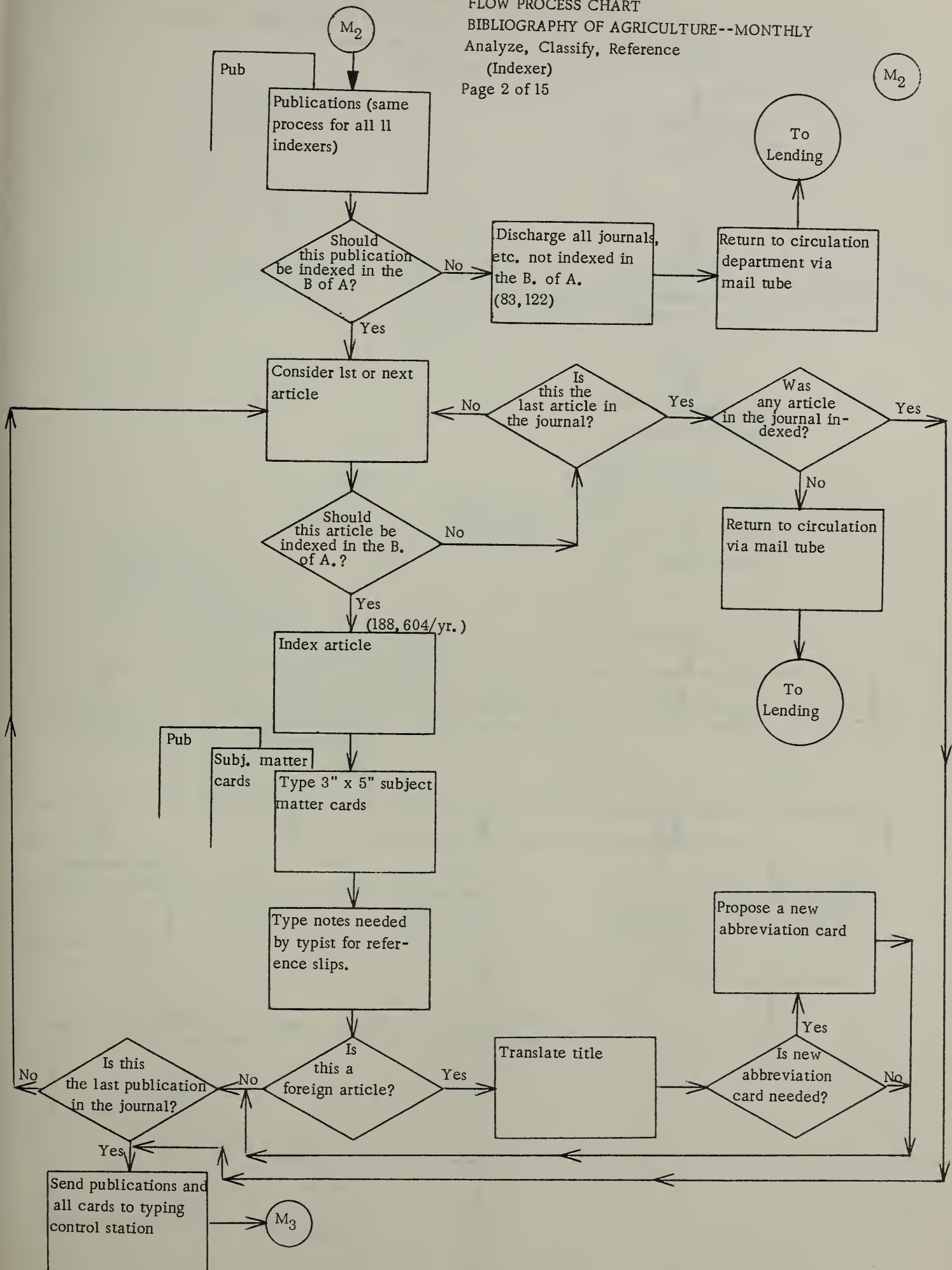




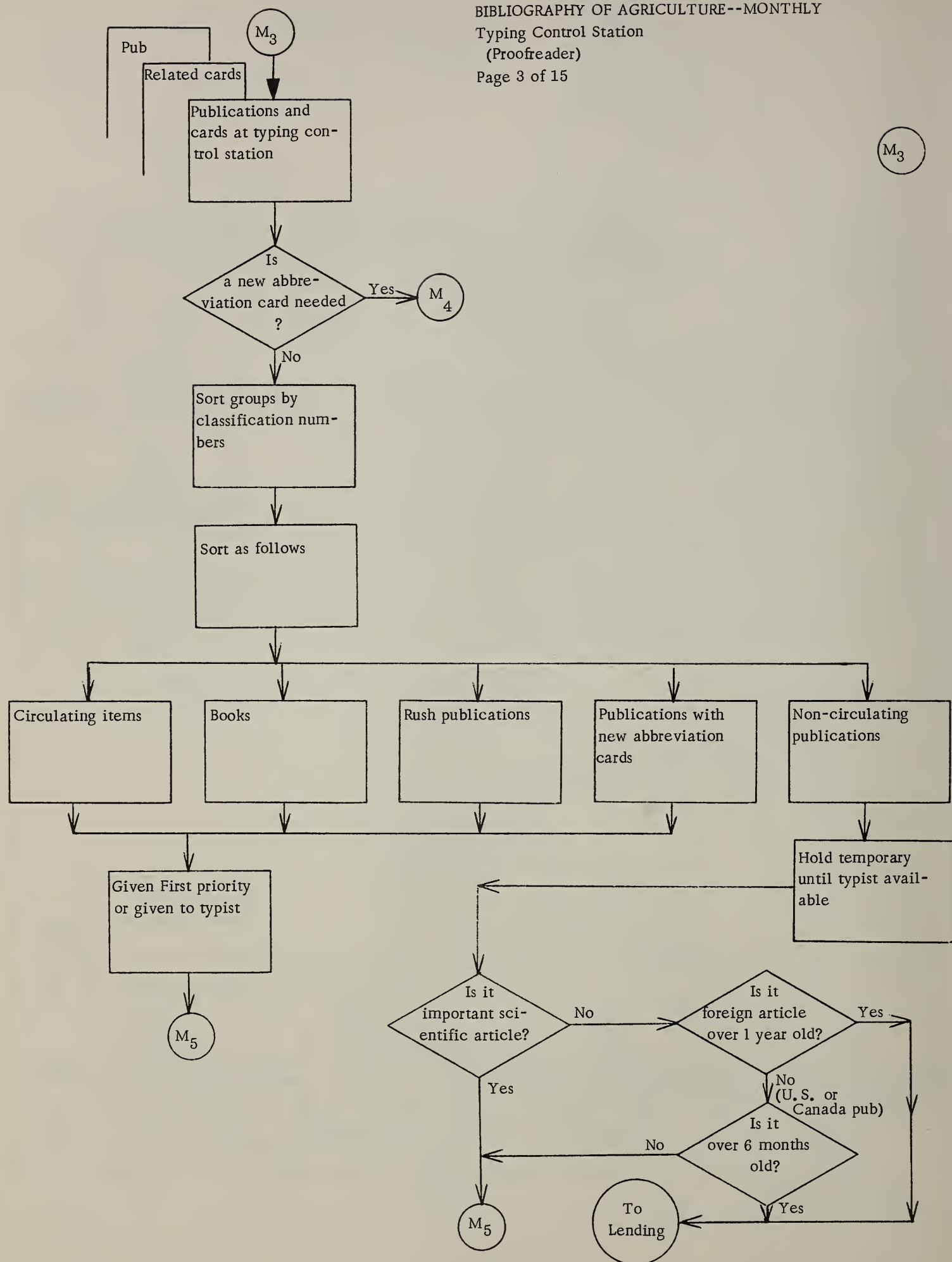
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BIBLIOGRAPHY OF AGRICULTURE--MONTHLY  
Sort and Distribute Mail  
(Mail Clerk)  
(Reference Clerk)  
(Indexer)  
Page 1 of 15



FLOW PROCESS CHART  
BIBLIOGRAPHY OF AGRICULTURE--MONTHLY  
Analyze, Classify, Reference  
(Indexer)  
Page 2 of 15

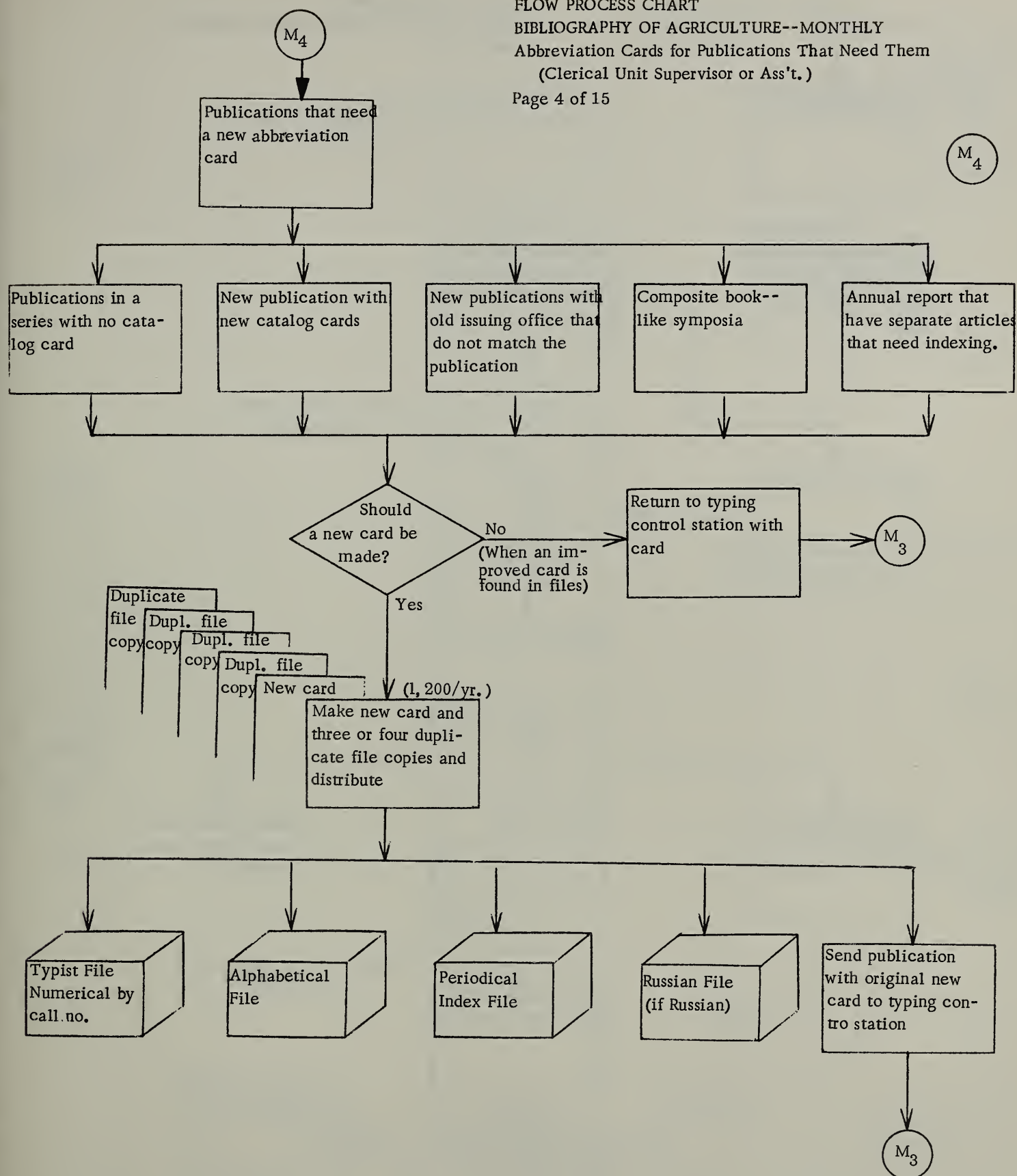


FLOW PROCESS CHART  
BIBLIOGRAPHY OF AGRICULTURE--MONTHLY  
Typing Control Station  
(Proofreader)  
Page 3 of 15

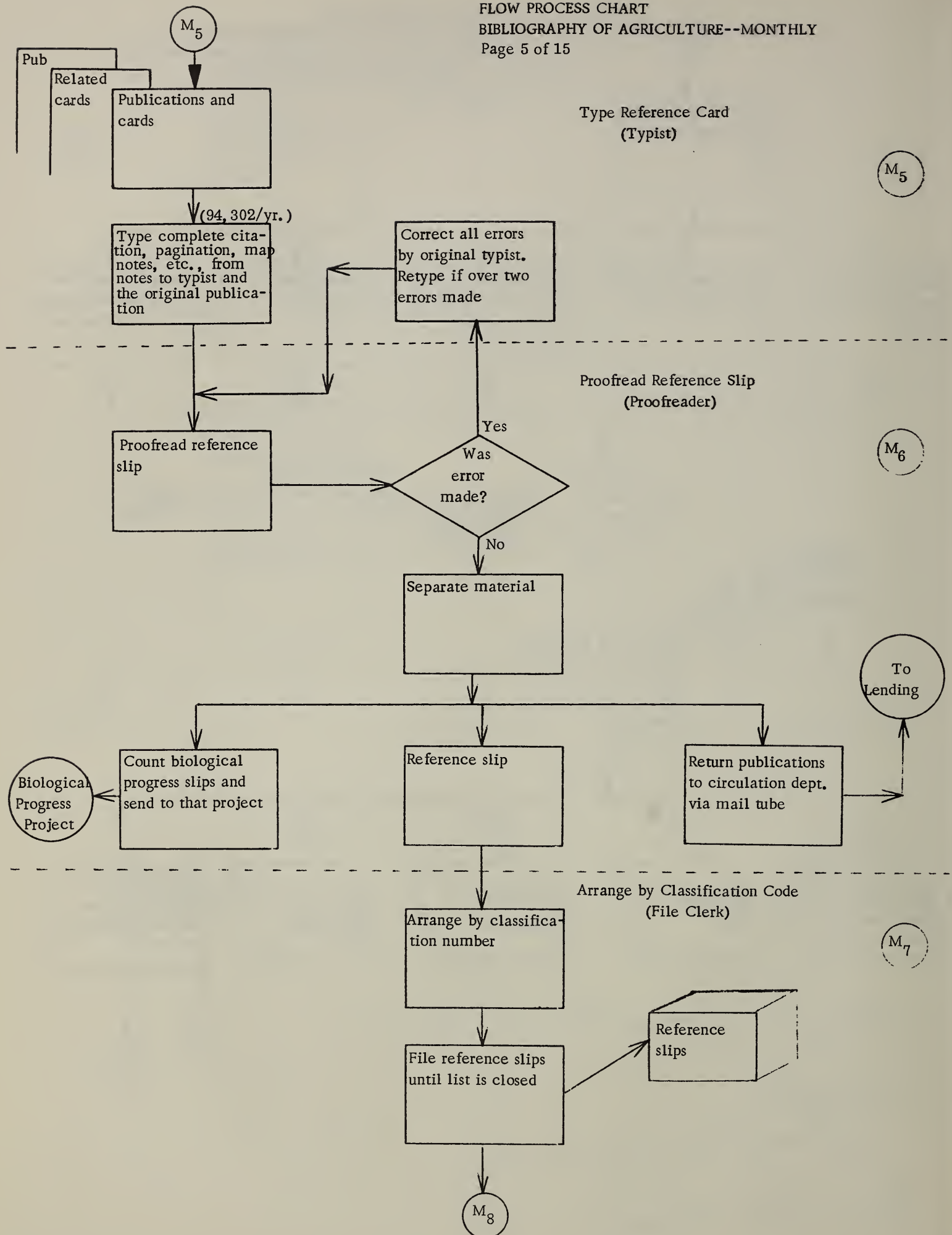


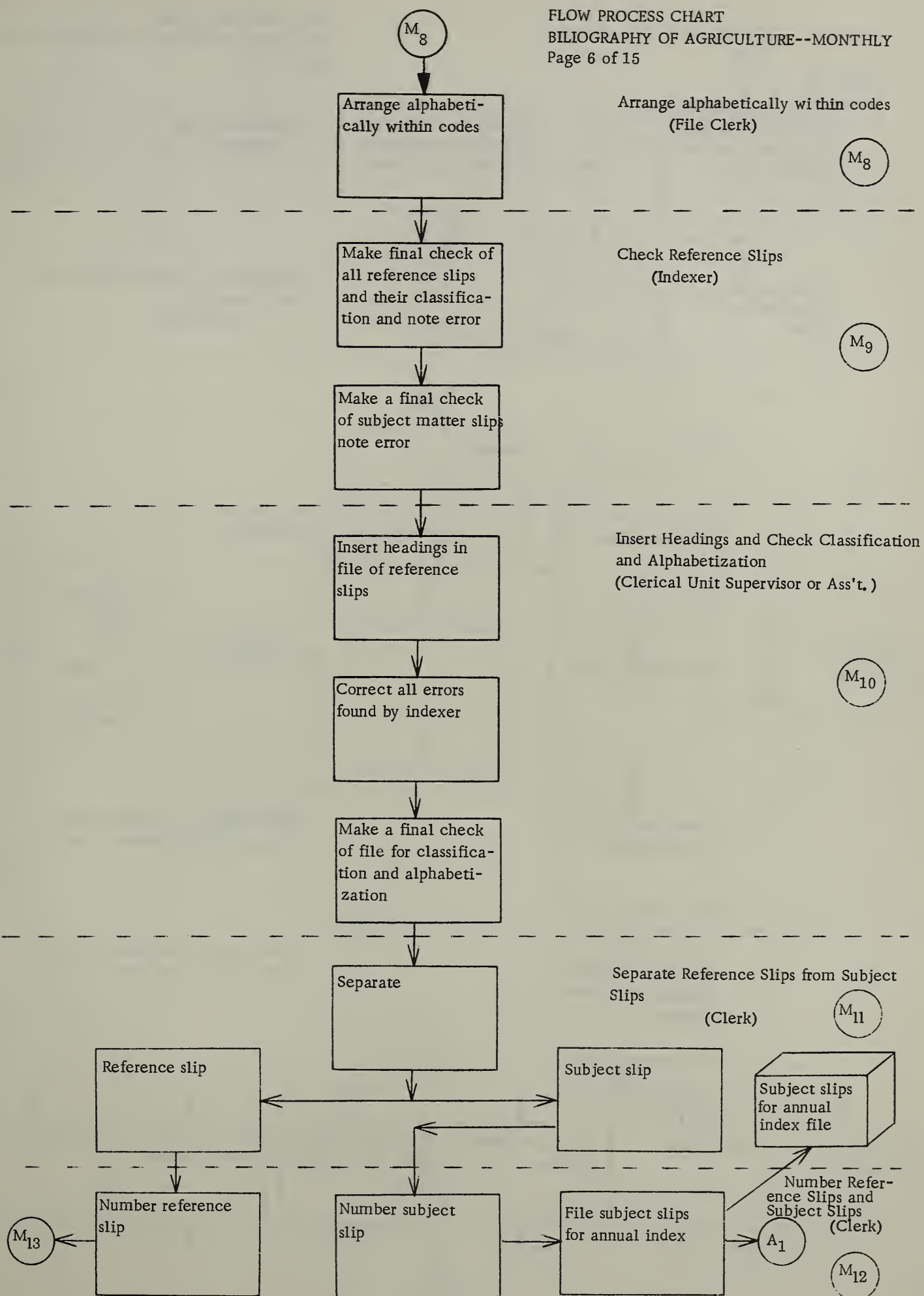


FLOW PROCESS CHART  
BIBLIOGRAPHY OF AGRICULTURE--MONTHLY  
Abbreviation Cards for Publications That Need Them  
(Clerical Unit Supervisor or Ass't.)  
Page 4 of 15

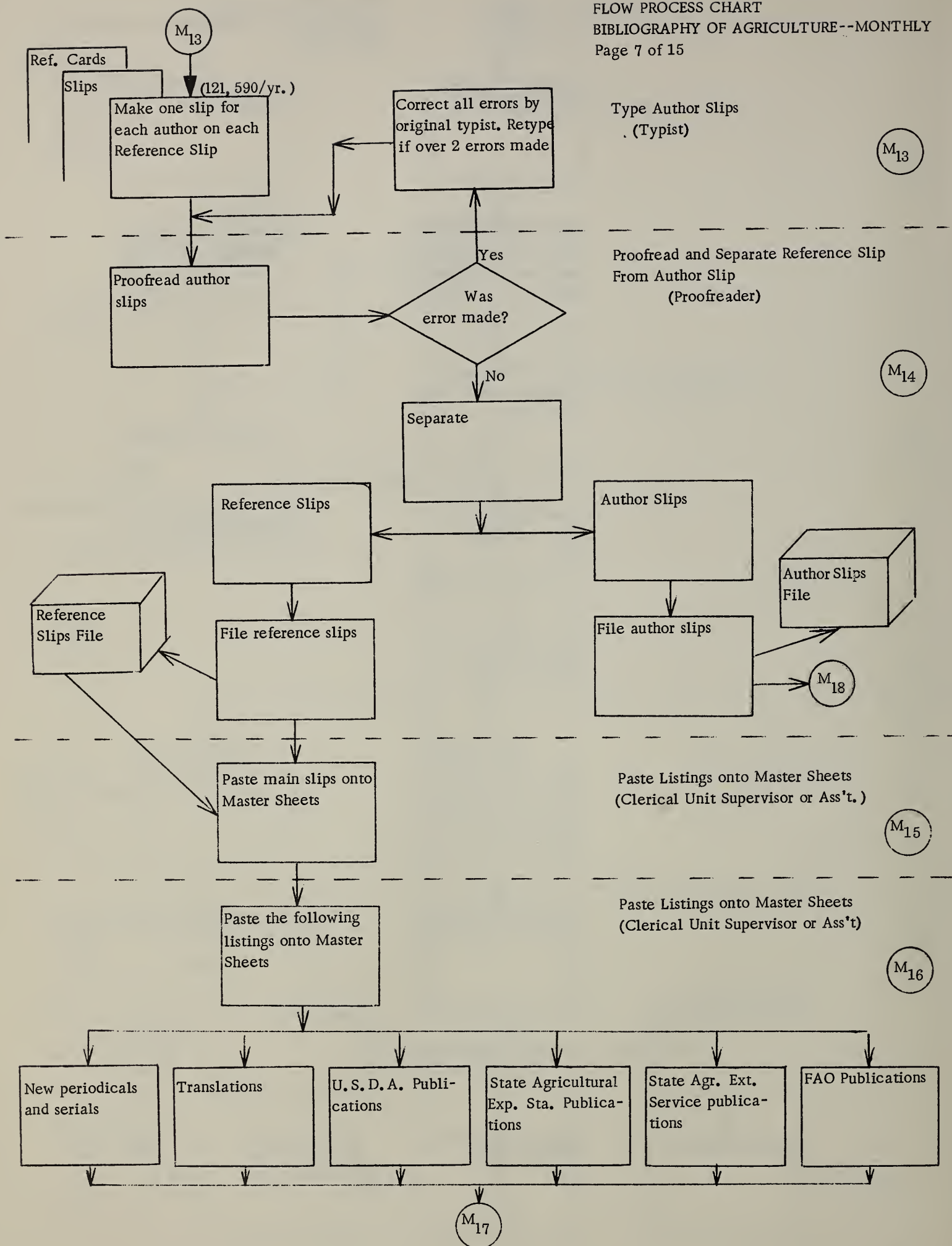


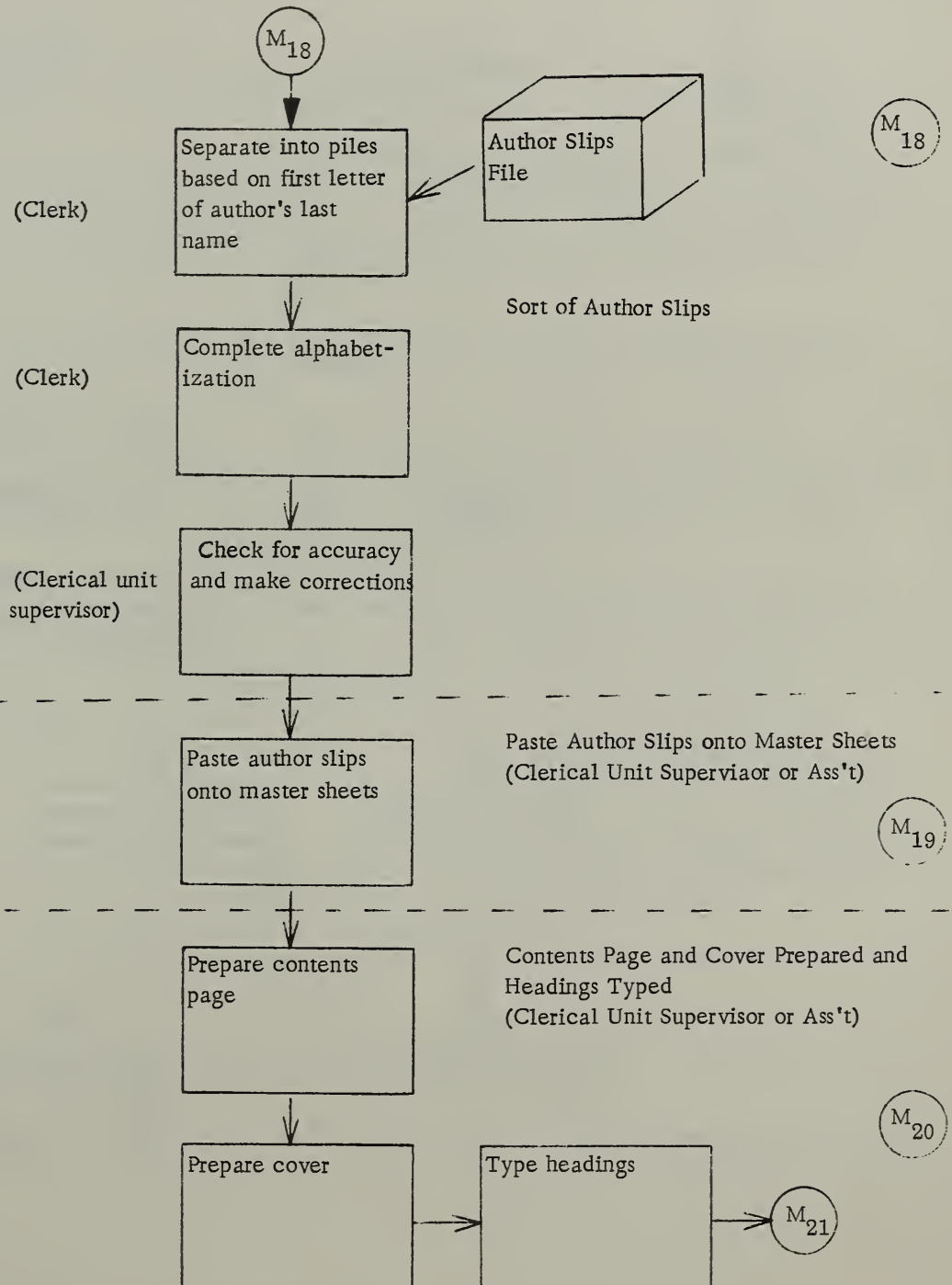
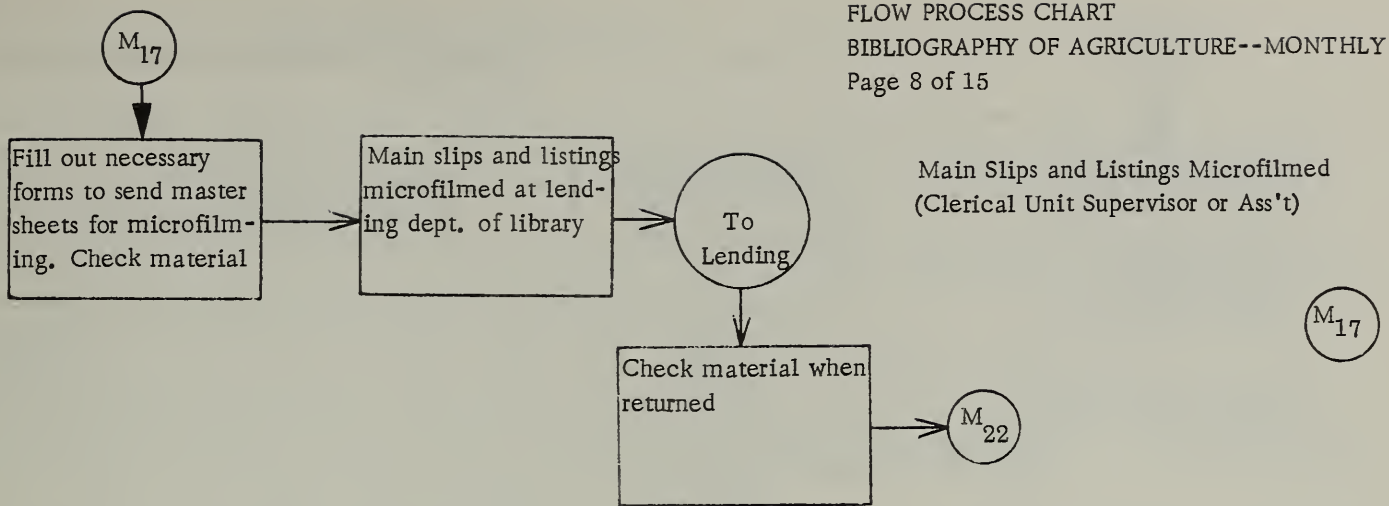
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Page 5 of 15

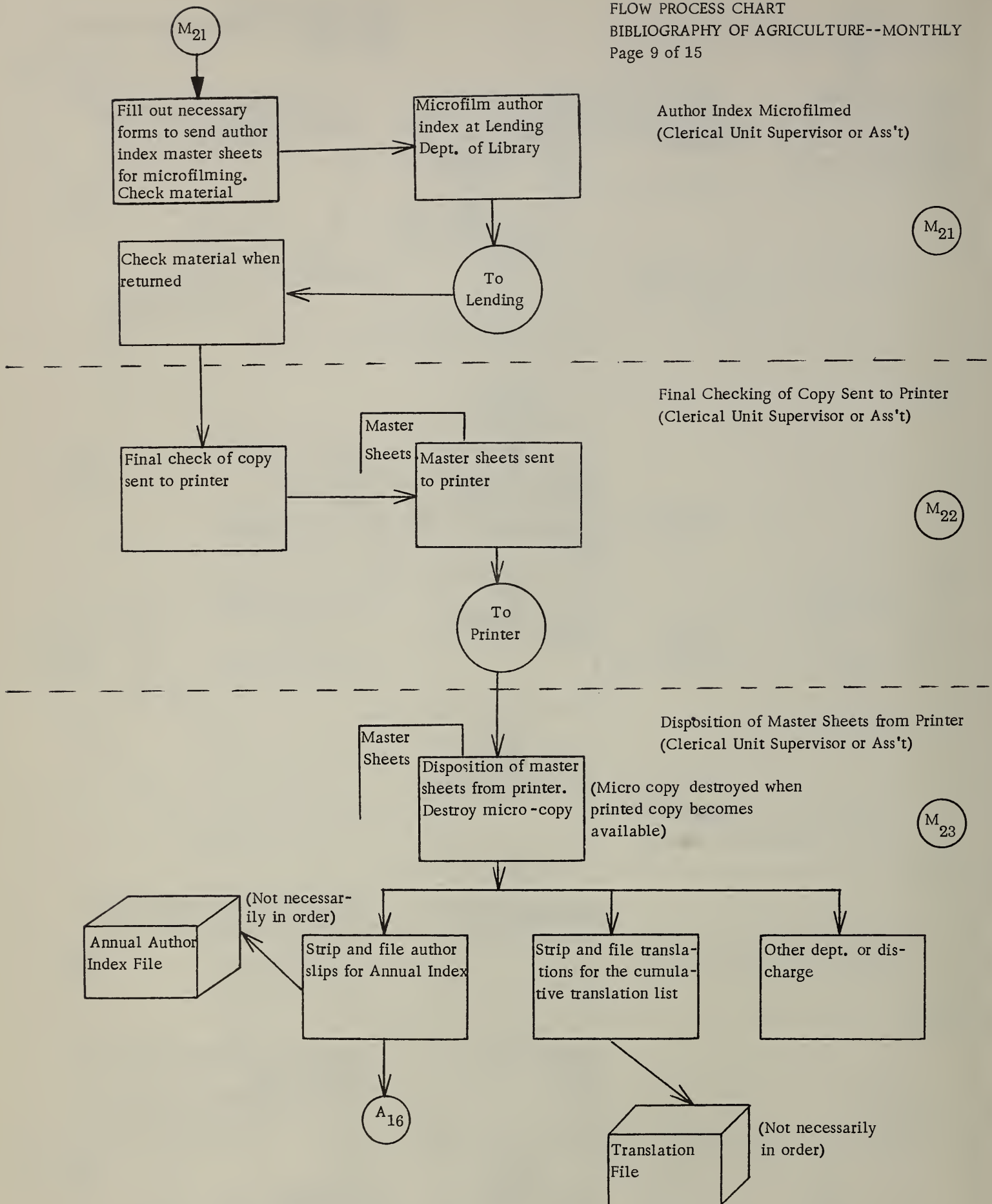














## SECTION II

### Bibliography of Agriculture - December Subject Index and Cumulative Author Index

The December issue of the Bibliography of Agriculture consists of a Subject Matter Index and an Accumulative Author Index for the year. In the preparation of the monthly issues, subject matter slips are made for this edition. The author slips used from each monthly issue (no author index in November issue as these slips are needed for this, the December issue) are placed with the authors of material for the November issue.

The author slips and subject slips are interfiled monthly until the time work begins on the December issue (last part of September). The rest of the work on this issue occurs along with the work on the October Issue, November issue, and part of the January issue, in addition to the time that would normally be spent on a December issue.

Since it is a rush job with a lot of deadlines, everyone in the Bibliography of Agriculture Section (along with anyone else in the Library Department that has some spare time) works on this edition in whatever position is needed at that time. Since it is possible for the personnel to be working on several different steps at one time and because some of the workers (secretaries from other departments of the library, etc.) do not keep an accurate account of the time spent on specific jobs, it hard to give specific goals for the work done on the annual issue. In the past, the workers on the Annual Index to the Literature of American Economic Entomology helped out on this annual issue of the Bibliography of Agriculture.

For this annual edition, only the people interviewed for specific jobs were listed. For some of the positions one or more different types of personnel were used as available.

#### A 1 - FILE OF SUBJECT SLIPS

Each month the subject slips from that issue of the Bibliography of Agriculture are filed by a clerk until that issue has been sent to the printer. (Estimated time - 11 hours).

#### A 2 - SORT SUBJECT SLIPS

After the monthly issue has been sent to the printer, the subject slips are separated, given a first sort, and then alphabetized. For the 94,302 references listed in the 1961 Bibliography of Agriculture, it was estimated that there were 188,604 subject matter slips. The standard for tearing the entries apart has been set at 300 per hour. (Estimated time - 627 hours). The standard for the first sort (alphabetical for the first letter of the subject) is set at 1200 per hour. (Estimated time - 156 hours). The standard for the alphabetizing of the subject slips is set at 200 per hour. (Estimated time - 943 hours).

#### A 3 - INTERFILE SUBJECT SLIPS

After each months subject slips are sorted alphabetically, they are interfiled with the subject matter slips of the previous months of that year's issue and stored until the last part of September. The standard for interfiling subject slips has been set at 200 per hour. (Estimated time - 943 hours.)

#### A 4 - REVIEWS ALL SUBJECTS IN ALPHABETICAL ORDER

About the last week in September, the indexers go through all the subject matter slip files to see if the slips are filed in their correct alphabetical order and to see if the right subject matter headings were used. Subject matter slips filed for issues published after this date are filed in an upright position so that they can be reviewed by an indexer later. (Estimated time - 694 hours).

#### A 5 - CROSS REFERENCES

During the year, a card file of cross references is kept (a record of material filed under a different subject.) These consist of SEE (when a subject might be looked for under either of two headings one is selected as a heading and a cross reference "SEE" card is made for the heading not chosen) and SEE ALSO (references made from a subject heading in use to related subject headings also in use by means of a "SEE ALSO" card). In October the list is gone through for a final check as to what is needed in that yearly edition, and the lists are checked through to see that the proper cross references have been used. (Estimated time - 46 hours).

#### A 6 - TYPE IN STRIPS

After all subject slips are reviewed and cross referenced, the typist types the subject slips on strips. The standard for this typing of slips has been set at 250 index slips per hour including corrections (step A 9). Estimated time - 582 hours).

#### A 7 - PROOFREAD

After typing in strips, the strips are proofread by a team of two - one indexer and one clerk. It is much easier for two people to proofread and they can do a much more accurate job. The indexer gets an additional review of all subjects and can make an instant decision when any errors are found. (Estimated time 471 hours of indexer and 471 hours of clerk's time).

#### A 8 - CHECK BY DIVISION CHIEF

After the strips are proofread by the indexer and a clerk, the division chief looks over the material to see if the subject matter heading can be combined or improved, etc. (Estimated time - 240 hours).

#### A 9 - TYPE ALL CORRECTIONS

After all the subject matter slips are proofread and checked, the errors are corrected by a typist. The standard of 250 index slips per hour includes the typing (step A 6) and correction (step A 9). (Estimated time - 172 hours).

#### A 10 - FINAL CHECK

After the typing corrections are made, two people go over the corrections and make a final check of the strips of subject matter slips. (Estimated time - 161 hours).

A 11 - FINAL CORRECTION OF SLIPS

After the final check, all corrections of the strips of subject matter slips are made by a typist or clerical unit supervisor. (Estimated time - 120 hours).

A 12 "MAKE UP" OF PAGES AND TYPE CONTINUED HEADINGS

The clerical unit supervisor or one of her assistants "Make Up" the subject index pages by cutting and measuring the strips that go on the pages. Continued headings have to be typed as needed. (Estimated time 70 hours).

A 13 - PASTE THE MASTER SHEETS

After the subject index slips have been cut and measured to fit the page and the continued headings typed, the master sheets are pasted by the clerical unit supervisor or her assistant. (Estimated time - 60 hours).

A 14 - FINAL CHECK OF PAGES

One or more of the indexers make a final check of the pages of the subject matter index before it is ready for press. (Estimated time - 41 hours.)

A 15 - MAKE ALL FINAL CORRECTIONS

The clerical unit supervisor or her assistant makes all corrections found by the Indexer in the Final Check and makes sure that the subject matter index is ready for printing (except for the numbering which has to be done after the author pages are completely numbered). (Estimated time - 30 hours.)

A 16 - FILE OF AUTHORS STRIPPED FROM MONTHLY MASTER SHEET

Each month the author slips are stripped from the Monthly Master Sheet and filed until they can be reversed and interfiled. (Estimated time - 30 hours).

A 17 - AUTHORS REVERSED

Each month the author slips are reversed so that they can be interfiled more efficiently. This is usually done by the mail clerk, division secretary, or other secretaries in the library department. (Estimated time - 120 hours).

A 18 - AUTHORS INTERFILED

After the author slips are reversed each month, they are interfiled with the previous months' slips for that year until the work begins on the annual issue the last of September. The bulk of this is done by the mail clerk, and division secretary, but part of it is done by the clerks. (Estimated time - 555 hours).

A 19 - CHECK FOR CORPORATE AUTHOR

One or more of the indexers go through the author files in September to check for corporate authors and designate which part of the corporate author reference should be used as an author. (Estimated time - 50 hours).

A 20 - MAKES NECESSARY CORRECTIONS

A typist goes through the author slips to correct the errors found by the indexer, particularly on the corporate author slips. Estimated time - 80 hours.

A 21- COMBINE OCTOBER AND NOVEMBER AUTHOR SLIPS WITH OTHERS AND CLIP CORPORATE AUTHORS THEY INTERFILED

The author slips for the October issue are back from the printer about the same time the November author slips are ready for use (the November issue does not have an Author Index as this would hold up the Annual Issue while it was being printed). The corporate authors are added to these author slips and they are then interfiled with the other author slips. (Estimated time - 174 hours.)

A 22- CHECK OF ALL CORRECTIONS AND ADDITIONS

One or more of the indexers make a check of all of the typists' corrections and additions. (Estimated time - 50 hours.)

A 23 - FINAL CORRECTION OF AUTHOR SLIPS

The clerical unit supervisor or her assistant types up the corrections found by the indexers and also gives the material a final check of her own to see that the author slips are ready for pasting. (Estimated time - 20 hours).

A 24 - CRISS CROSS FOR PASTING

The Author slips are made into piles for a given last name and are separated from the next alphabetical last name by criss-crossing the pile. They may or may not be alphabetical for the first and second name of the author for that given last name. (Estimated time - 164 hours).

A 25 - PASTE SLIPS TO STRIPS AND CHECK ALPHABETIZATION

The author slips are pasted onto long strips. Special care is taken that they are in the right order alphabetically down to the initials of the first and second names. (Estimated time - 529 hours).

A 26 - CUT OUT AUTHORS THAT ARE ALIKE AND CHECK FOR ERRORS

One or more of the indexers go over the author strips to cut out authors that are alike. The slips are checked alphabetically and numerically and needed corrections are sent to the typist. (Estimated time - 60 hours.)

A 27 - CORRECT AUTHOR STRIPS

The clerical unit supervisor or one of her assistants corrects all errors found by the indexers and gives the strips a final proofing before the pages are made up. (Estimated time - 102 hours).

A 28 - MAKE UP OF PAGES AND ADD PAGE NUMBERS

The clerical unit supervisor or one of her assistants makes up the author index Master Pages. The page numbers are added at this time. (Estimated time - 96 hours).

A 29- ADD CONTINUED HEADINGS

The clerical unit supervisor or one of her assistants add the continued headings to the master sheets. Space for these continued headings was allowed when the pages were made up (Step 28). (Estimated time - 43 hours).



#### A 30 - ADD PAGE NUMBERS TO SUBJECT MASTER SHEETS

After the author Master Sheets have been numbered, the Subject Master Sheets can be numbered as they follow the author section. (Estimated time - 5 hours).

#### A 31 - FINAL CHECK OF ALL ERRORS

The clerical unit supervisor or one of her assistants makes a final check of both the Subject Master Sheets and Author Master Sheets for all errors and completes the table of contents. (Estimated time - 29 hours.)

#### A 32 - MICROFILM

After the annual issue is complete, it is sent to be microfilmed (in the library) to have a complete record in case the Master Sheets should be lost by the printer or in transit and as a check as to what it contains while that issue is being printed. The same AD-245's are used as those described for the microfilming of the monthly issues. (Estimated time - 2 hours).

#### A 33 - TO PRINTER

#### A 34 - RETURN OF MASTER SHEETS

After all the described steps are completed, the annual issue is sent to the printer. After printing, the material is returned to the Bibliography of Agriculture where it is checked with the printed copy. When it has been established that the Master Sheets no longer are needed, they are destroyed. (Estimated time - 5 hours).

### DIVISION OF FIELD SERVICES

Policy Develops plans and procedures for the administration of policies designed to serve U.S.D.A. personnel in specialized subject areas or at locations outside the D.C. Metropolitan area.

#### Bee Culture Library

1. Provides complete library service in the field of bee culture.
2. Compiles a bibliography of the world's bee keeping literature.
3. Prepares translations of papers relating to current bee culture research.
4. Arranges for their exchange with foreign institutions.

Personnel: 2      Collection: 3, 800 volumes

#### Law Branch

1. Provides complete legal service in the field of agriculture to the Office of the General Counsel and other dept. officials.
2. Catalogs and classifies legal materials.
3. Prepares legislative histories for department-administered acts.

Personnel: 4      Collection: 49, 000 (including legislative reference sets in the Director's Office)

Beltsville Branch Provides a complete library service to the research personnel at the Plant Industry Station and Agricultural Research Center, Beltsville, Maryland. Personnel: 5      Collection: 28, 000 volumes

#### Agricultural Research Service Field Libraries

- |                 |  |
|-----------------|--|
| 1. California   | Western Utilization Research and Development Division at Albany.       |
| 2. Illinois     | Northern Utilization Research and Development Division at Peoria.      |
| 3. Iowa         | National Animal Disease Laboratory at Ames.                            |
| 4. Louisiana    | Southern Utilization Research and Development Division at New Orleans. |
| 5. New York     | Plum Island Animal Disease Laboratory at Long Island.                  |
| 6. Pennsylvania | Eastern Utilization Research and Development Division at Wyndmoor.     |

#### Forest Service Field Libraries

- |                   |  |
|-------------------|--|
| 1. California     | Pacific Southwest Forest and Range Experiment Station at Berkeley. |
| 2. Georgia        | Southern Region at Atlanta.  |
| 3. Louisiana      | Southern Forest Experiment Station at New Orleans.                 |
| 4. North Carolina | Southeast Forest Experiment Station at Asheville.                  |
| 5. Oregon         | Pacific Northwest Forest and Range Experiment Station at Portland. |
| 6. Pennsylvania   | Northeastern Forest Experiment Station at Upper Darby.             |
| 7. Wisconsin      | Forest Products Laboratory at Madison.                             |



F I E L D   A N D   S P E C I A L   S E R V I C E S

D I V I S I O N   O F   I N D E X I N G   A N D   D O C U M E N T A T I O N

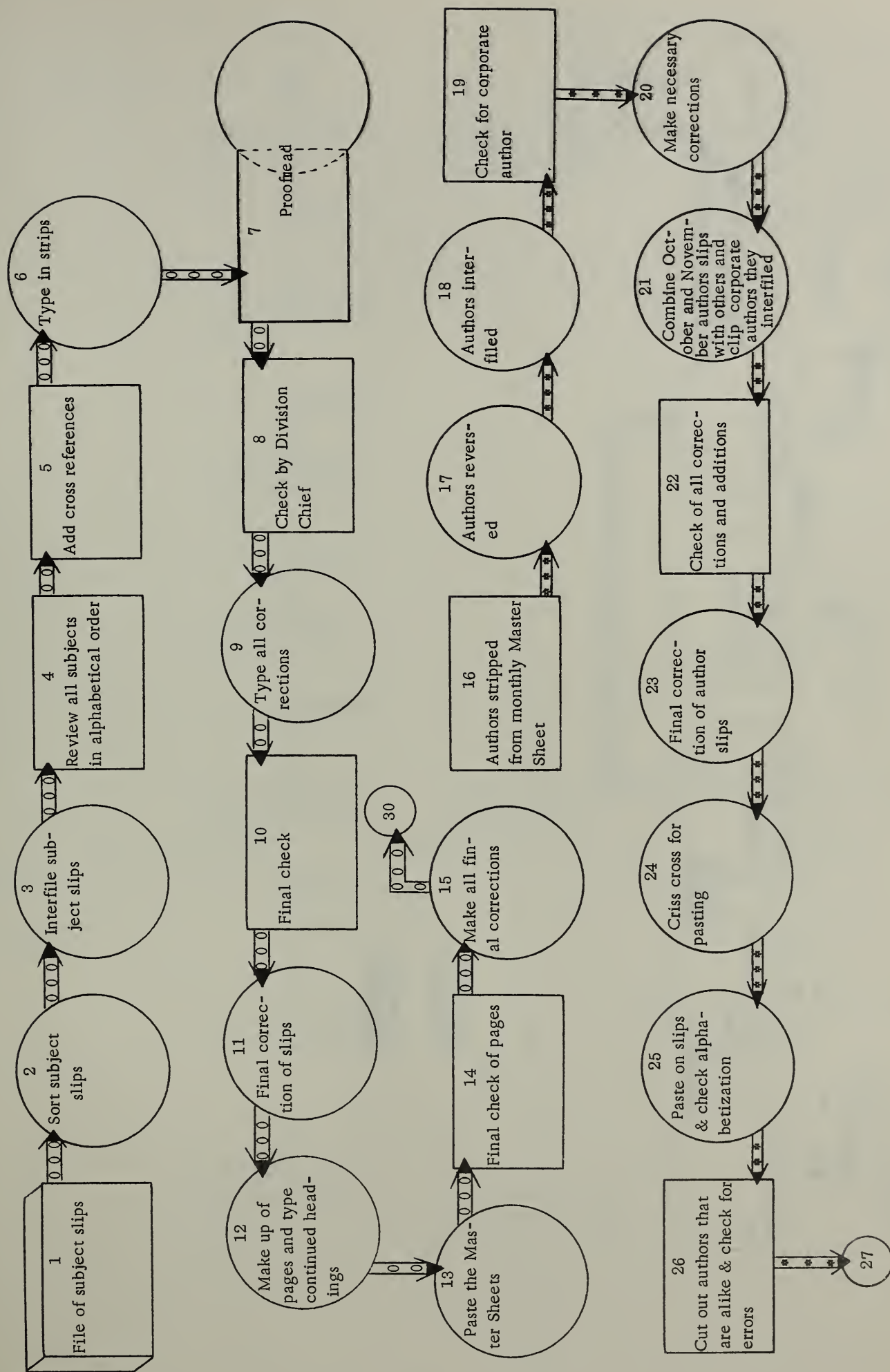
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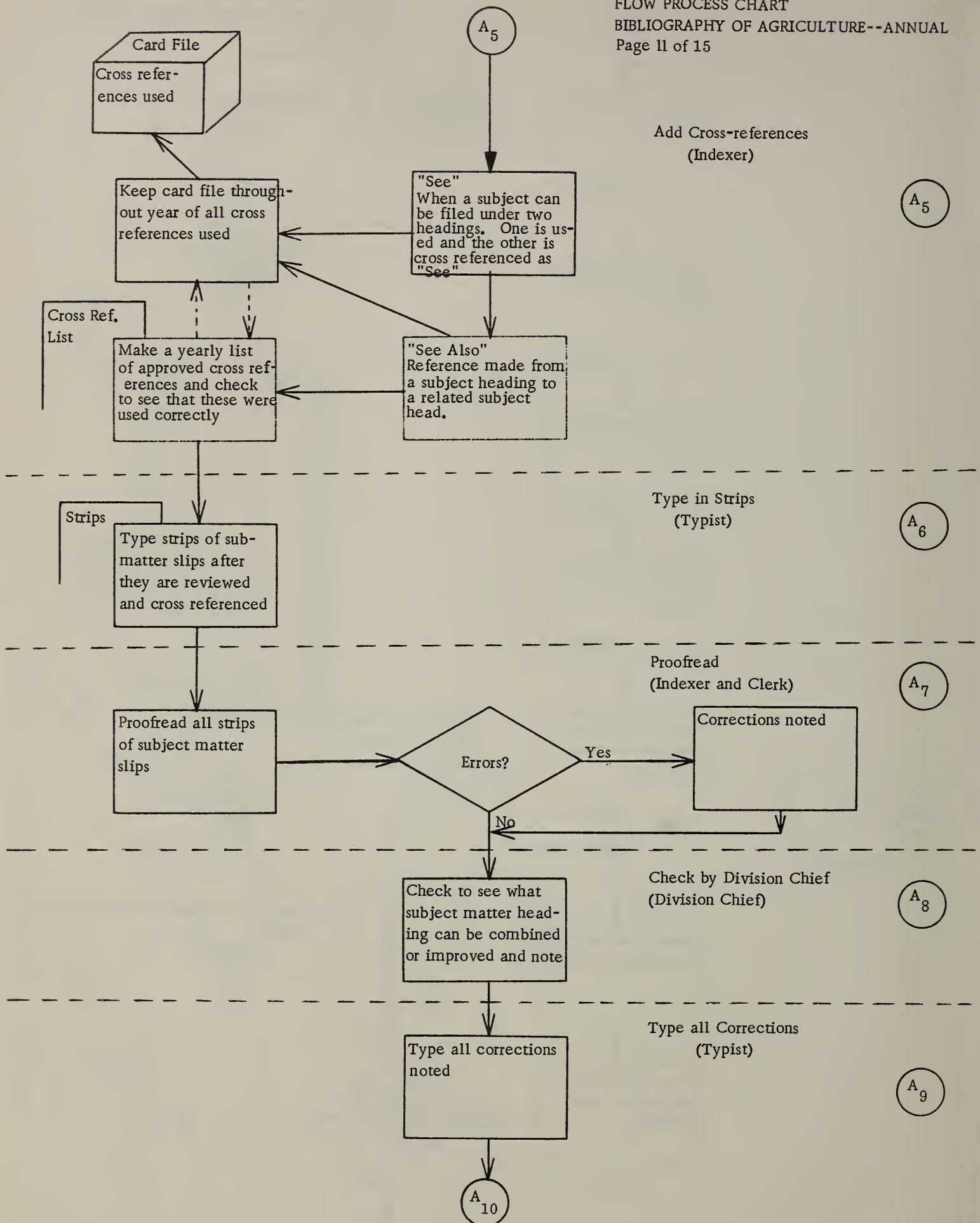
## Page 2 of 2

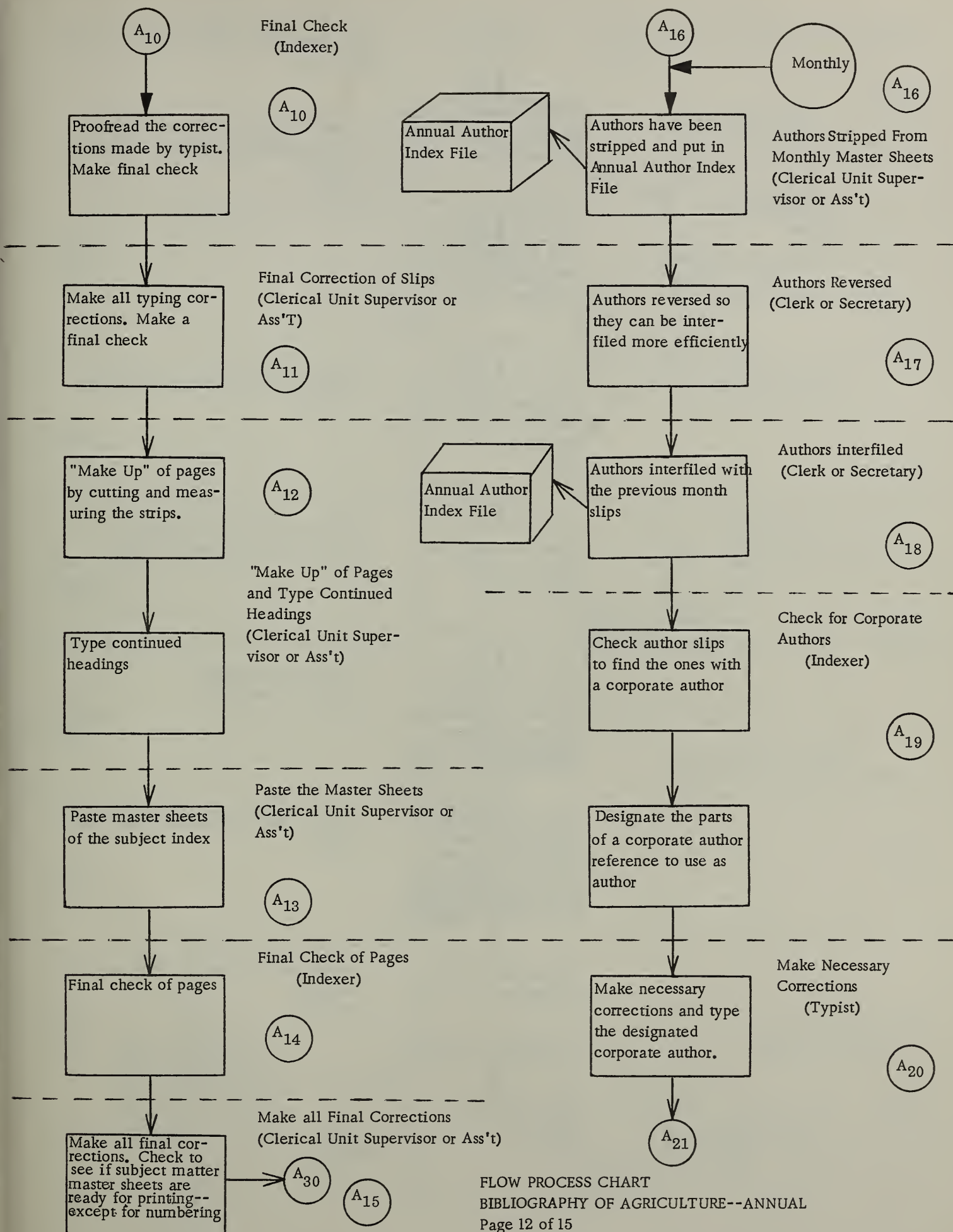


Author Slip



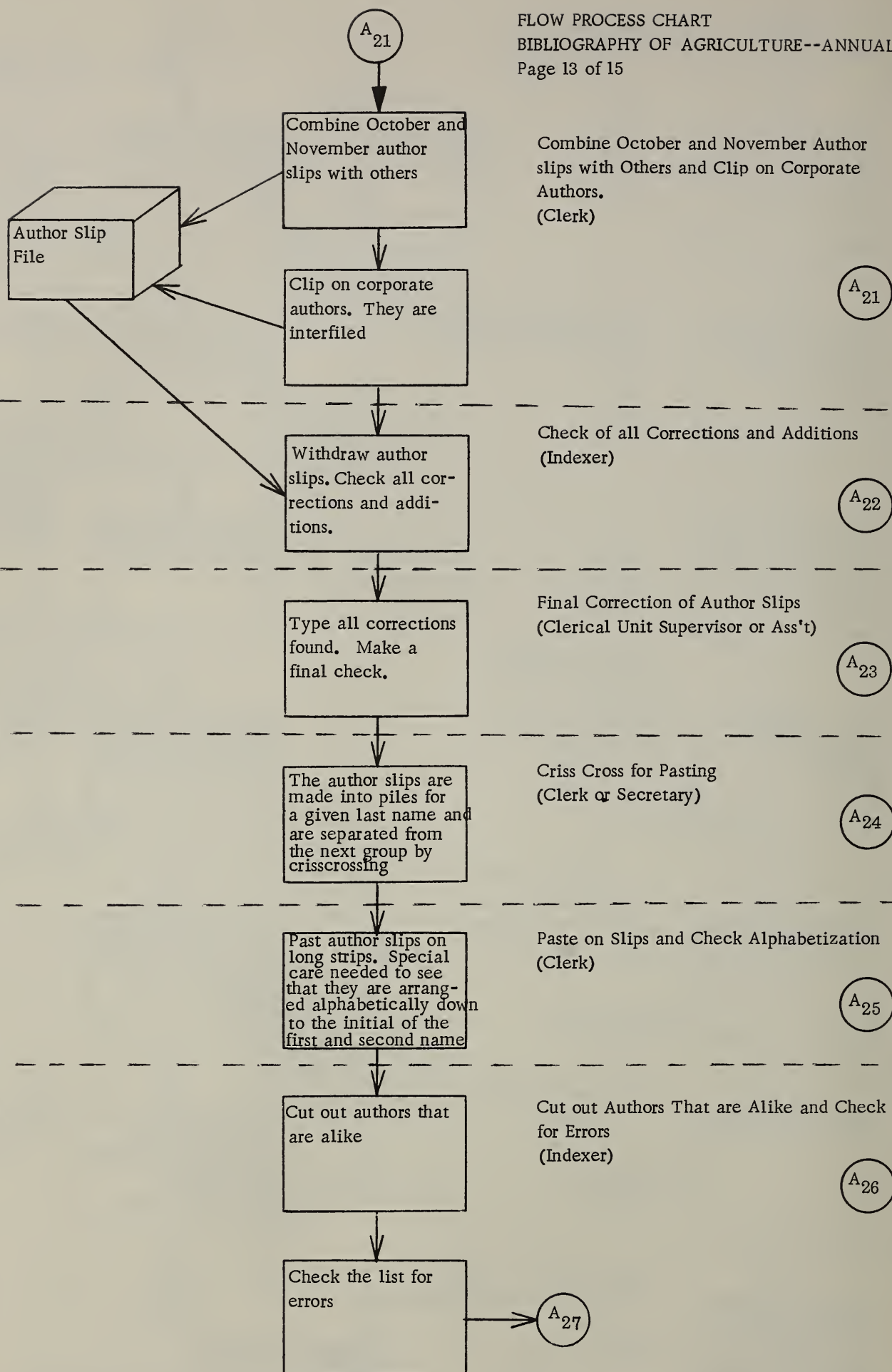


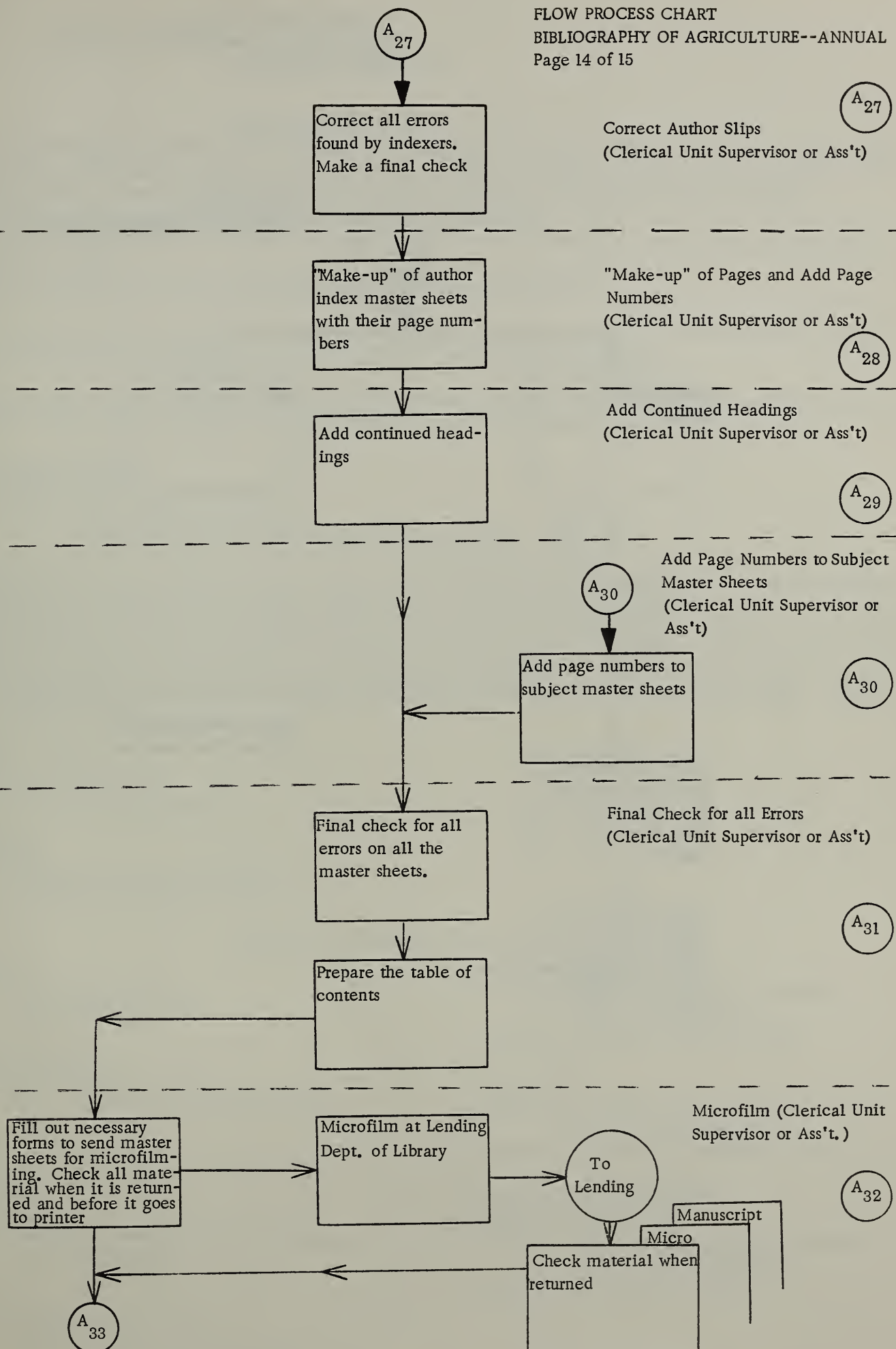




FLOW PROCESS CHART  
BIBLIOGRAPHY OF AGRICULTURE--ANNUAL  
Page 12 of 15







Send to Printer  
(Clerical Unit Supervisor or Ass't)

A<sub>33</sub>

A<sub>33</sub>

Manuscript to  
Printer

Microfilm held

To  
Printer

Return of Master Sheets  
(Clerical Unit Supervisor or Ass't)

After printing the  
finish copy is proof-  
read against the copy  
that went to the  
printer

A<sub>34</sub>

Master sheets and  
microfilms are de-  
stroyed when it has  
been established that  
they are no longer  
needed



## SECTION FIVE

### RESEARCH STUDIES

#### Costs for Fiscal Year 1962

Costs for each organizational segment were accumulated by the main types of expense. Subsequently, all costs of management and supervision were distributed to the organizational divisions and sections on a prorata-basis of man years as follows:

1. Costs for Office of Director and Management Services were distributed to each organizational unit of the remaining services (Public, Technical, and Field and Special Services).
2. Costs for the assistant director of each service were distributed to the organizational divisions and sections within the respective service.
3. Costs for each division chief were distributed to the sections within the division.

Upon completion of the above, all costs were reflected in the sectional organization related to the library functional operations of acquiring, cataloging and lending publications, plus the special projects and branch libraries.

There follows an outline of the functions by organizational section of the main library insofar as they relate to the acquisition and lending of publications, and the furnishing of reference service, together with the number of work units for the year.

#### Publication Selection Section

Function - To select publications for acquisition

Effective Work Unit: Titles selected and ordered 8,556

Un-requested and un-ordered titles received and selected 7,310

Total acquired 15,866

Total selections were 31,837 of which 15,866 were acquired as shown above, and 15,971 not acquired. During the following year of 1963, selections are expected to be even greater, although funds for acquisition of publications will be less. The selections not acquired are placed in a desiderata file under the theory that some day, when funds permit, the selections will be purchased. Since, during this two-year period, less than half the total selections are acquired, it seems unlikely that future fund allotments will provide for acquisition of current selections, let alone the accumulated deficit in the desiderata file. Therefore, selections in excess of acquisition (desiderata file) are not properly a work product and no cost value can be attached thereto. All costs must be borne by the selections acquired.

#### Order Section

Function - To order publications

Work Units - Total titles ordered 8,556

#### Exchange Section

Function - To arrange for exchange of publications

Work Units - Exchange titles requested 1,899

### DIVISION OF CATALOG AND RECORDS

#### Catalog Section

Function - To catalog publications

Work Units - Titles cataloged 11,564

#### Subject Heading Section

Function - To aid systematic cataloging

Work Units - None. (Combined with Catalog Section).

#### Preparations Section

Function - To type, paste and other preparation of publications for shelving

Work Units - Volumes accessioned 12,027

#### Records Section

Function - To maintain records to identify and assure receipt of serial publications

Work Units - Periodicals received and handled 399,787.

### PUBLIC SERVICES

#### Division of Lending

Function - To maintain, circulate and lend publications

Work Units - Total loans 200,437

#### Division of Reference

Function - To provide reference service

Work Units - Reference questions answered 61,601

### FIELD AND SPECIAL SERVICES

#### Bibliography of Agriculture

Function - To plan, develop, compile and publish the Bibliography of Agriculture

Work Units - Items indexed 90,215

## DETERMINATION OF WORK UNITS BY FUNCTION

[illegible]

NATIONAL AGRICULTURAL LIBRARY  
Fiscal Year 1962 - Summary of Costs

	Salaries	Fringe Benefits	Travel	Communi- cations	Printing	Other Costs	Supplies & Material	Equipment	Publications	Unidentifiable Misl. Oper. Costs	TOTAL Other Costs Col. 2-10	TOTAL Salaries & Other Costs
<b>FIELD &amp; SPECIAL SERV.</b>												
Office of Asst. Director Division of Indexing & Documentation	\$ 5,174.40	\$ 377.30	\$	\$	\$			\$ 48.50	\$	\$ 116.94	\$ 542.74	\$ 5,717.14
Office of Chief Bibliography of Agric. Special Projects Sect.	21,826.00 118,060.10	1,591.46 8,608.47		402.61 700.01	17,300.00			343.98 2,344.57		829.38 5,653.05	3,167.43 35,925.48	24,993.43 153,985.58
Oriental Project	22,194.32	797.40	964.50	298.70	1,637.29			114.75	593.10	909.00	5,314.74	27,509.06
Entomological Project	7,820.80	570.77		148.70				114.66		276.46	1,110.59	8,931.39
Biological Project	36,312.42	3,475.10		297.40	625.34		530.01	754.46	9,014.62	1,819.10	16,516.03	52,828.45
Sub-Tot. Special Projects	\$ 66,327.54	\$ 4,843.27	\$ 964.50	\$ 744.80	\$ 2,262.63		\$ 530.01	\$ 983.87	\$ 9,607.72	\$ 3,004.56	\$ 22,941.36	\$ 89,268.90
Sub-Tot.-Div. Index & Doc.	\$206,213.64	\$ 15,043.20	\$ 2,283.88	\$ 1,847.42	\$ 19,562.63		\$	\$ 3,672.42	\$ 9,607.72	\$ 9,486.99	\$ 62,034.27	\$268,247.91
<b>Division of Field Services</b>												
Office of Chief												
Agency Field Libraries												
Bee Culture Library	\$ 13,099.20	\$ 955.14	\$ 311.70	\$ 402.61	\$ 67.08			\$ 229.32	\$ 727.84	\$ 552.92	\$ 3,246.61	\$ 16,345.81
Beltsville Library	23,258.64	1,695.93		402.61	1,087.80			475.33	6,912.41	1,146.48	11,720.56	34,979.20
Law Library	29,300.16	2,136.45		551.21	587.41			516.08	4,094.49	1,244.30	9,129.94	38,430.10
Sub-Tot. - Div. Field Serv.	\$ 65,658.00	\$ 4,787.52	\$ 311.70	\$ 1,356.43	\$ 1,74,229			\$ 1,220.73	\$ 11,734.74	\$ 2,943.70	\$ 24,097.11	\$ 89,755.11
<b>TOTAL FIELD &amp; SPEC. SERV.</b>	\$277,046.04	\$ 20,208.02	\$ 2,595.58	\$ 3,203.85	\$ 21,304.92		\$	\$ 4,941.65	\$ 21,342.46	\$ 12,547.63	\$ 86,674.12	\$363,720.16
<b>OFFICE OF THE DIRECTOR</b>	\$ 39,240.05	\$ 2,849.72	\$ 3,401.52	\$ 997.41				\$ 2,504.81		\$ 1,169.98	\$ 10,923.44	\$ 50,163.49
<b>MANAGEMENT SERVICES</b>												
Office of Asst. Director Division of Administration												
Office of Chief	\$ 24,408.23	\$ 1,779.75	\$ 782.75	\$ 402.61				\$ 584.82		\$ 829.38	\$ 4,379.31	\$ 28,787.54
Budget and Fiscal Sect.	28,833.60	2,102.43		253.91				788.53		1,118.28	4,263.15	33,096.75
Personnel Section	12,923.92	942.36		402.61				389.88		552.92	2,287.77	15,211.69
General Services Sect.	42,292.51	3,083.80	136.10	700.01				1,691.67		2,398.84	8,010.42	50,302.93
Sub-Tot. Management Serv.	\$104,458.26	\$ 7,908.34	\$ 918.85	\$ 1,759.14				\$ 3,454.90		\$ 4,899.42	\$ 18,940.65	\$127,398.91
<b>TOTAL - Off. of Director &amp; Management Serv.</b>	\$147,698.31	\$ 10,758.06	\$ 4,320.37	\$ 2,756.55				\$ 5,959.71		\$ 6,069.40	\$ 29,864.09	\$177,562.40
<b>SUMMARY</b>												
Office of Director & Management Serv. Public Services	\$147,698.31 258,582.29	\$ 10,758.06 18,854.28	\$ 4,320.37	\$ 2,756.55	\$	\$ 289.02	\$ 4,653.19	\$ 5,959.71 1,866.90	\$	\$ 6,069.40 13,308.50	\$ 29,864.09 60,113.82	\$177,562.40 318,696.11
Technical Services	248,057.31	18,087.34	1,010.04	1,653.93			221.29	5,592.45	43,654.37	12,050.59	82,270.01	330,327.32
Field and Special Services	277,046.04	20,208.02	2,595.58	3,203.85	21,304.92		530.01	4,941.65	21,342.46	12,547.63	86,674.12	363,720.16
<b>TOTAL</b>	\$931,383.95	\$ 67,907.70	\$ 7,925.99	\$ 11,929.92	\$ 38,131.26	\$ 289.02	\$ 5,404.49	\$ 18,359.81	\$ 64,997.83	\$ 43,976.12	\$258,922.04	\$1190,305.99



NATIONAL AGRICULTURAL LIBRARY  
Fiscal Year 1962 - Summary of Costs

	O T H E R   I D E N T I F I A B L E   C O S T S										TOTAL Salaries & Other Costs	
	Salaries	Fringe Benefits	Travel	Commun- ications	Printing	Other Costs	Supplies & Material	Equipment	Publications	Unidentifiable Miscel. Oper. Costs		Other Costs Col. 2-10
TECHNICAL SERVICES												
Office of Asst. Director	\$ 5,174.40	\$ 377.30	\$ 1,010.04	\$			\$	\$ 15.10	\$	\$ 116.94	\$ 1,519.38	\$ 6,693.78
Div. of Acquisitions												
Office of Chief	20,193.60	1,472.44		551.31				91.97		712.43	2,828.15	23,021.75
Pubs. Selection Sect.	17,398.64	1,268.64						89.80		695.57	2,054.01	19,452.65
Order Section	20,736.00	1,511.98		253.91				157.82	43,654.37	1,222.50	46,800.58	67,536.58
Exchange Section	10,272.00	748.99		253.91				71.38		552.92	1,627.20	11,899.20
Sub-Total - Div. of Acq.	\$ 68,600.24	\$ 5,002.05	\$ 1,010.04	\$ 1,059.13				\$ 410.97	\$ 43,654.37	\$ 3,183.42	\$ 53,309.94	\$121,910.18
Div. of Cat. & Records												
Office of Chief	\$ 17,358.80	\$ 1,265.73		\$			\$	\$ 69.30		\$ 536.89	\$ 1,871.92	\$ 19,230.72
Catalog Section	52,779.84	3,848.49		297.40				283.95		2,199.51	6,629.35	59,409.19
Preparation Section	31,849.50	2,322.33		148.70				243.53		1,887.39	4,601.95	36,451.45
Records Section	68,487.20	4,993.81		148.70				501.05		3,881.22	9,524.78	78,011.98
Subject Heading Sect.	3,807.33	277.63					221.29	4,068.55		245.22	4,812.69	8,620.02
Sub-Tot. - Div. Cat. & Rec.	\$174,282.67	\$ 12,707.99		\$ 594.80			\$	\$ 5,166.38		\$ 8,750.23	\$ 27,440.69	\$201,723.36
TOTAL TECHNICAL SERV.	\$248,057.31	\$ 18,087.34	\$ 1,010.04	\$ 1,653.93			\$	\$ 5,592.45	\$ 43,654.37	\$ 12,050.59	\$ 82,270.01	\$330,327.32
PUBLIC SERVICES												
Office of Asst. Director	\$ 10,649.60	\$ 776.53						\$ 38.78		\$ 276.46	\$ 1,091.77	\$ 11,741.37
Division of Lending												
Office of Chief	15,720.80	1,146.30		551.31				72.28		515.32	2,285.21	18,006.01
Loan Section	12,409.16	904.83		402.61				101.87		726.26	2,135.57	14,544.73
Circulating Unit	9,788.11	713.71		148.70				100.29		714.93	1,677.63	11,465.74
Periodical Unit	6,911.47	503.95		148.70				62.62		446.48	1,161.75	8,073.22
Window Unit	4,936.08	359.92		148.70				51.34		366.03	925.99	5,862.07
Sub-Total - Loan Sect.	\$ 34,044.82	\$ 2,482.41		\$ 848.71			\$	\$ 316.12		\$ 2,253.70	\$ 5,900.94	\$ 39,945.76
Maintenance Section												
Bookstacks Unit	\$ 47,273.96	\$ 3,447.03		\$ 148.70				\$ 418.82		\$ 2,985.77	\$ 7,000.32	\$ 54,274.28
Bindery Unit	12,556.54	915.57			\$ 16,781.27			112.12		802.84	18,612.30	31,168.84
Weeding & Inventory	46,697.55	3,405.00		148.70				320.44		2,284.39	6,158.53	52,856.08
Sub-Total Maintenance	\$106,528.05	\$ 7,767.60		\$ 297.40	\$ 16,781.27			\$ 851.88		\$ 6,073.00	\$ 31,771.15	\$138,299.20
Photoduplication Section												
Order Processing Unit	\$ 8,616.40	\$ 628.27		\$ 1,305.13	\$ 45.07		\$	\$ 74.57		\$ 531.63	\$ 2,539.60	\$ 11,156.00
Photographic Unit	13,085.22	954.12					289.02	93.69		667.93	6,703.02	19,788.24
Sub-Total Photoduplication	\$ 21,701.62	\$ 1,582.39		\$ 1,305.13	\$ 45.07		\$ 289.02	\$ 168.26		\$ 1,199.56	\$ 9,242.62	\$ 30,944.24
Sub-Total Div. of Lending	\$177,995.29	\$ 12,978.70		\$ 3,022.55	\$ 16,826.34		\$ 289.02	\$ 1,408.54		\$ 10,041.58	\$ 49,199.92	\$227,195.21
Division of Reference												
Office of Chief	\$ 10,004.80	\$ 729.50		\$ 402.61				\$ 38.78		\$ 276.46	\$ 1,447.35	\$ 11,452.15
General Reference Sect.	37,315.96	2,720.93		253.91				240.51		1,714.60	4,929.95	42,245.91
Special Bibliographies	17,191.04	1,253.50		253.91				101.40		722.94	2,331.75	19,522.79
Nursery & Seed Trade Cat.	5,425.60	395.12		402.61				38.89		276.46	1,113.08	6,538.68
Sub-Total Div. of Ref.	\$ 69,937.40	\$ 5,099.05		\$ 1,313.04			\$	\$ 419.58		\$ 2,990.46	\$ 9,822.13	\$ 79,759.53
TOTAL PUBLIC SERVICES	\$258,582.29	\$ 18,854.28		\$ 4,315.59	\$ 16,826.34	\$ 289.02	\$ 4,653.19	\$ 1,866.90		\$ 13,308.50	\$ 60,113.82	\$318,696.11

# NATIONAL AGRICULTURAL LIBRARY

## Distribution of Cost of Supervision to Functional Organization - Library Task Force - Fiscal Year 1962

	Man Years	Salaries	Other Direct	Total Direct	Distribution of Supervision			Cost of Function
					Director & Mgmt. Serv.	Asst. Director	Division Chiefs	
<b>TECHNICAL SERVICES</b>								
Office of Asst. Director	.423	\$ 5,174.40	\$ 1,519.38	\$ 6,693.78	\$ 547.79	\$ ( 7,241.57)	\$	
Division of Acquisitions								
Office of Chief	2.577	20,193.60	2,828.15	23,021.75	3,337.18	432.62	\$(26,791.55)	
Publication Selection Sect.	2.516	17,398.64	2,054.01	19,452.65	3,258.19	421.03	7,528.43	30,660.30
Exchange Section	2.000	10,272.00	1,627.20	11,899.20	2,589.98	336.05	6,001.30	20,826.53
Order Section	4.422	20,736.00	3,146.21	23,882.21	5,726.45	741.63	13,261.82	43,612.11
Purchases			43,654.37	43,654.37				43,654.37
Sub - Total - Div. of Acquisitions	11.515	\$ 68,600.24	\$ 53,309.94	\$121,910.18	\$ 14,911.80	\$ 1,931.33		\$138,753.31
Div. of Catalog and Records								
Office of Chief	1.942	\$ 17,358.80	\$ 1,871.92	\$ 19,230.72	\$ 2,514.87	\$ 323.92	\$(22,069.51)	
Catalog Section	7.956	52,779.84	6,629.35	59,409.19	10,302.94	1,332.87	5,892.56	76,937.56
Subject Heading Section	.887	3,807.33	4,812.69	8,620.02	1,148.66	148.69	662.09	10,579.46
Preparation Section	6.827	31,849.50	4,601.95	36,451.45	8,840.90	1,147.01	5,075.99	51,515.35
Records Section	14.039	68,487.20	9,524.78	78,011.98	18,180.36	2,357.75	10,438.87	108,988.96
Sub - Total - Div. of Cat. & Rec.	31.651	\$174,282.67	\$ 27,440.69	\$201,723.36	\$ 40,987.73	\$ 5,310.24	—	
TOTAL - TECHNICAL SERVICES	43.589	\$248,057.31	\$ 82,270.01	\$330,327.32	\$ 56,447.32	—	—	\$386,774.64
<b>PUBLIC SERVICES</b>								
Office of the Asst. Director	1.000	\$ 10,649.60	\$ 1,091.77	\$ 11,741.37	\$ 1,294.99	\$(13,036.36)	\$	
Division of Lending								
Office of Chief	1.864	15,720.80	2,285.21	18,006.01	2,413.86	521.47	(20,941.34)	
Loan Section	2.627	12,409.16	2,135.57	14,544.73	3,401.94	743.07	1,612.49	20,302.23
Circulation Unit	2.586	9,788.11	1,677.63	11,465.74	3,348.84	717.00	1,570.60	17,102.18
Periodical Routing Unit	1.615	6,911.47	1,161.75	8,073.22	2,091.41	443.24	984.24	11,592.11
Window Unit	1.324	4,936.08	925.99	5,862.07	1,714.57	365.02	795.77	8,737.43
Sub Total - Loan Sect.	8.152	\$ 34,044.82	\$ 5,900.94	\$ 39,945.76	\$ 10,556.76	\$ 2,268.33	\$ 4,963.10	\$ 57,733.95
Maintenance Section								
Bookstacks Unit	10.800	\$ 47,273.96	\$ 7,000.32	\$ 54,274.28	\$ 13,985.90	\$ 2,985.33	\$ 6,554.64	\$ 77,800.15
Binding Unit	2.904	12,556.54	18,612.30	31,168.84	3,760.65	808.25	1,759.07	37,496.81
Weeding & Inventory Unit	8.263	46,697.55	6,158.53	52,856.08	10,700.50	2,281.36	5,025.92	70,863.86
Sub - Total - Maintenance Sect.	21.967	106,528.05	31,771.15	138,299.20	28,447.05	6,074.94	13,339.63	186,160.82

( ) Represents deductions



# NATIONAL AGRICULTURAL LIBRARY

Distribution of Cost of Supervision to Functional Organization - Library Task Force - Fiscal Year 1962

	Man Years	Salaries	Other Direct	Total Direct	Distribution of Supervision			Cost of Function
					Director &		Division Chiefs	
					Mgmt. Serv.	Asst. Director		
PUBLIC SERVICES (Cont'd.)								
Photoduplication Section								
Order Processing Unit	1. 923	\$ 8,616.40	\$ 2,539.60	\$ 11,156.00	\$ 2,490.27	\$ 521.45	\$ 1,172.72	\$ 15,340.44
Photographic Unit	2. 416	13,085.22	6,703.02	19,788.24	3,128.69	664.85	1,465.89	25,047.67
Sub Total Photoduplication Sect.	4. 339	\$ 21,701.62	\$ 9,242.62	\$ 30,944.24	\$ 5,618.96	\$ 1,186.30	\$ 2,638.61	\$ 40,388.11
Sub-Total - Div. of Lending	36. 322	\$177,995.29	\$ 49,199.92	\$227,195.21	\$ 47,036.63	\$ 10,051.04	\$ —	\$284,282.88
Division of Reference								
Office of Chief	1. 000	\$ 10,004.80	\$ 1,447.35	\$ 11,452.15	\$ 1,294.99	\$ 273.76	\$ (13,020.90)	\$
General Reference Section	6. 202	37,315.96	4,929.95	42,245.91	8,031.52	1,720.80	8,229.20	60,227.43
Special Bibliography Section	2. 615	17,191.04	2,331.75	19,522.79	3,386.40	717.00	3,463.57	27,089.76
Nursery & Seed Trade Catalog Sect.	1. 000	5,425.60	1,113.08	6,538.68	1,294.99	273.76	1,328.13	9,435.56
Sub-Total - Div. of Reference	10. 817	\$ 69,937.40	\$ 9,822.13	\$ 79,759.53	\$ 14,007.90	\$ 2,985.32	—	\$ 96,752.75
TOTAL - PUBLIC SERVICES	48. 139	\$258,582.29	\$ 60,113.82	\$318,696.11	\$ 62,339.52	\$ —	—	\$381,035.63
FIELD AND SPECIAL SERVICES								
Office of the Asst. Director	. 423	\$ 5,174.40	\$ 542.74	\$ 5,717.14	\$ 547.78	\$ (6,264.92)	\$	\$
Division of Indexing & Documentation								
Office of Chief	3. 000	21,826.00	3,167.43	24,993.43	5,884.97	419.76	(29,298.16)	
Bibliography of Agriculture	20. 448	118,060.10	35,925.48	153,985.58	26,479.81	2,850.54	19,131.71	202,447.64
Special Projects Section								
Oriental Project	3. 288	22,194.32	5,314.74	27,509.06	4,257.93	457.34	3,076.30	35,300.63
Entomological Project	1. 000	7,820.80	1,110.59	8,931.39	1,294.99	137.82	937.54	11,301.74
Biological Project	6. 580	36,312.42	16,516.03	52,828.45	8,521.03	920.94	6,152.61	68,423.03
Sub-Total Special Projects	10. 868	\$ 66,327.54	\$ 22,941.36	\$ 89,268.90	\$ 14,073.95	\$ 1,516.10	\$ 10,166.45	\$115,025.40
Sub-Total - Div. of Index. & Doc.	34. 316	\$206,213.64	\$ 62,034.27	\$268,247.91	\$ 44,438.73	\$ 4,786.40	—	\$317,473.04
Division of Field Services								
Office of Chief								
Agency Field Libraries								
Bee Culture Library	2. 000	\$ 13,099.20	\$ 3,246.61	\$ 16,345.81	\$ 2,589.98	\$ 275.66	—	\$ 19,211.45
Beltsville Library	4. 147	23,258.64	11,720.56	34,979.20	5,370.32	576.37	—	40,925.89
Law Library	4. 501	29,300.16	9,129.94	38,430.10	5,828.75	626.49	—	44,885.34
Sub-Total - Field Libraries	10. 648	\$ 65,658.00	\$ 24,097.11	\$ 89,755.11	\$ 13,789.05	\$ 1,478.52	—	\$105,022.68
TOTAL FIELD AND SPECIAL SERVICES	45. 387	\$277,046.04	\$ 86,674.12	\$363,720.16	\$ 58,775.56	\$		\$422,495.72



# NATIONAL AGRICULTURAL LIBRARY

Distribution of Cost of Supervision to Functional Organization - Library Task Force - Fiscal Year 1962

	Man Years	Salaries	Other Direct	Total Direct	Distribution of Supervision		Cost of Function
					Director & Mgmt. Serv.	Asst. Director	
<u>OFFICE OF DIRECTOR</u>	4.232	\$ 39,240.05	\$ 10,923.44	\$ 50,163.49	\$ (50,163.49)		
<u>MANAGEMENT SERVICES</u>							
Office of the Asst. Director							
Division of Administration							
Office of Chief	3.000	\$ 24,408.23	\$ 4,379.31	\$ 28,787.54			
Budget & Fiscal Section	4.045	28,833.60	4,263.15	33,096.75			
Personnel Section	2.000	12,923.92	2,287.77	15,211.69			
General Services Section	8.677	42,292.51	8,010.42	50,302.93			
Sub-Total - Management Services	17.722	\$108,458.26	\$ 18,940.61	\$127,398.91	\$ (127,398.91)		
TOTAL - OFFICE OF DIR. & MGMT. SERV.	21.954	\$147,698.31	\$ 29,864.09	\$177,562.40	\$ (177,562.40)		
<u>SUMMARY</u>							
Office of Dir. & Mgmt. Services	21.954	\$147,698.31	\$ 29,864.09	\$177,562.40	\$ (177,562.40)		\$
Public Services	48.139	258,582.29	60,113.82	318,696.11	62,339.52		381,035.63
Field and Special Services	45.387	277,046.04	86,674.12	363,720.16	58,775.56		422,495.72
Technical Services	43.589	248,057.31	82,270.01	330,327.32	56,775.56		386,774.64
TOTAL	159.069	\$931,383.95	\$258,922.04	\$1190,305.99			\$1190,305.99

TASK FORCE ORIENTATION AND INFORMATION RETRIEVAL EDUCATION  
of  
NATIONAL AGRICULTURAL LIBRARY TASK FORCE ABLE

April 24-May 31, 1962

April 24 and 25

Films were used to show graphically some of the problems of Information Storage and Retrieval. Talks by Library staff members dealt with the different phases of information dissemination with special reference to the Agricultural Library's functions. Subjects discussed were:

Technical Processes - Miss Shachtman  
Storage Dissemination - Miss Carabelli  
Subject Analysis - Mrs. Bryant  
Storage Retrieval - Mr. Lulich  
External Relations - Mr. Payne

The talks by Library Staff members on the Library's functions and problems were informative and helpful to members of the Task Force. Some of the highlights of these talks are stated briefly below:

Prominent systems and techniques for information storage and retrieval have developed only in recent years. Mrs. Bryant described the following:

1. Zator descriptors
2. Peekaboo Cards - uses item numbers on term cards. Terms indicated by light coming through at points where there are pertinent items.
3. Specialized coding and scanning devices such as non-fixed field punching, Luhn scanner.
4. ASTIA system of descriptors.
5. GE Search Comparator - makes sequential search on tape for natural language.
6. Ralph Shaw's "Rapid Selector" and similar machines, such as "File Search".
7. Automatic Indexing and Abstracting (mainly under Luhn et. al. at IBM).

Miss Shachtman spoke briefly on experimental attempts to automate technical processes at the Library of Congress and at IBM Advanced Systems Library, San Jose, California. She did not seem to think that much of lasting value had been accomplished in these experiments.

Various libraries have studied computer systems, but only a small number have thus far used them to any great extent. Books in ten Monsanto Company libraries are carded by computers. The Decatur, Illinois Public Library uses IBM for ordering, etc. A study by the New York State Library determined that operations time would be doubled by computer systems. The University of Illinois and General Electric are trying to develop a workable system for libraries, but have concluded that the change would raise costs considerably.

Mr. Payne said that in regard to external relations the National Agricultural Library is concerned with mode of cooperation between USDA and State Agricultural Experiment Stations, especially in coordination of preparation of bibliographies and similar operations. He also mentioned the field libraries, the USDA Law Library, and the sub-unit at the Plant Industry Station at Beltsville.

Mr. Shipley said that the Division of Lending of the National Agricultural Library develops policies and procedures for making publications available to users, including photoduplication, and is concerned with maintenance and preservation of published materials. The Division of Reference provides reference services designed to specific requests, and compiles and prepares specialized bibliographies.

Several important problems based on facts and experiences of speakers emerged from the first two days of the Task Force's existence. They are defined briefly in the following paragraph:

Proliferation of today's information material has brought about difficulties in such library procedures as bibliographies, indexing, abstracting, analysis, listing, cataloging, circulating, etc. These problems cannot be solved with the machines available today. Classifications of library materials would have to be revised for computer use. There should be cooperation between libraries, states, government agencies to prevent duplication of bibliographies. Preservation of books, periodicals, reports and other valuable literature on agricultural subjects has become an important feature of library work, largely owing to poor paper used. Studies of microfilm, micro-cards or microprint, with laminated materials, were recommended. Need for better methods of preservation was pointed out as a part of the Task Force's job. Other features emphasized for immediate study to improve efficiency of library operations, were the problem of mechanical translations and ways to improve the National Agricultural Library's photoduplication system.

April 26 (Thursday) and April 27 (Friday)

Members of the Library staff escorted Task Force members on a tour of the Library, explaining briefly the work of each division, section and unit. The tour included the Law Library which serves all USDA lawyers. This sub-unit of the National Agricultural Library, maintained in and for the Office of the General Counsel, contains the following types of material: Congressional Record, Federal Statutes, Federal Register, Legal text books and periodicals, States' reports of cases, and States' Laws and Codes. This Law Library does its own ordering and cataloging. It services twenty-one field offices, each of which has the same reference materials.



It was impossible to take notes while on tour, but it was learned that "Serials are the most important material in the Library" and that the Bibliography of Agriculture goes to 290 foreign libraries.

After the tour of the Library, the Work Groups were assigned quarters in or adjacent to some part of the Library. After becoming installed in quarters, groups engaged in discussions of ways to conduct studies and factors to be kept in mind throughout. Task Force members were advised to work through Mr. Foster Mohrhardt in collaborating with outside agencies, and with Mr. McCormick on reports. Tours and lectures by specialists were arranged to acquaint the Task Force with all phases of the problems. Work groups were asked to consider land-grant colleges as sharers of computer systems. A questionnaire was discussed to learn who uses the National Agricultural Library, how many, how necessary to them is the information they seek, and of what benefit to the agricultural sciences. The questionnaire was designated as the function of the System Requirements Group. Various approaches to be used as a basis for getting the information from users of the Library were discussed at length by that group.

April 30, (Monday)

Discussions and development of ideas for the questionnaire were continued by members of the System Requirements Group under the leadership of Dr. Anderson. A lecture by Joseph Becker, Central Intelligence Agency, then was presented before all members of the Task Force. Mr. Becker told of present achievements in automation and attempts to adapt such systems to library operations and information such as printed data, analysis, cataloging, indexing, bibliographies, filing, and handling materials on shelves. He pointed out successes with automation of source data by the punch paper (machine recording) method, but knew of no method as yet that can deal with automation of printed matter. He did point out, however, that machines can discriminate digits and letters - key words - but not sentences. He told of some experiments which are investigating speaking by machines with some success. He told of the recording of a page of written material indicating words used most frequently (identifying the index terms). He also mentioned attempts to abstract mechanically by picking out the five most important sentences.

May 1 (Tuesday)

A tour to the National Library of Medicine, Bethesda, was of great value and interest to members of the Task Force. Mr. Seymour Tane discussed that Library's present system of preparing issues of INDEX MEDICUS and Dr. Jerome Rogers, Director, discussed the proposed system, called "MEDLARS". Historically, the account given of the Medical Library's experiences were of interest to the Task Force. Up until 1957, the preparation of INDEX MEDICUS was an operation almost identical with the present production of the Bibliography of Agriculture. There was a ceiling on the number of items that could be included per year, even on a 24-hours working basis. A grant from Ford Foundation for a two-year study - to investigate mechanization of the process - resulted in the January 1960 issue of MEDICAL SCIENCE appearing as the first product of the new system.

Use of punched cards was considered by the National Library of Medicine, but the number required is too great, estimated at 4,000,000 a year, and the idea was discarded. It led to better procedures, however, and further studies are now being carried out to develop a system that will handle the Library's entire operations.

At present in the National Library of Medicine, the journals received are classified by language and subject. They are then distributed to professional indexers who scan, abstract, read carefully, and then utilize a pre-compiled medical subject-list of medical terms for the machine "cataloging". The average number of these terms per article is two (2), with a range from one (1) to eight (8).

The Task Force was escorted on a tour of the Library of Medicine with special attention given to features of the new building designed for modernization of operations. The tour ended in the offices of Dr. Rogers, Director, who contributed an hour-long lecture and discussion of automation systems as adapted or not-adapted to the National Medical Library, and of the MEDLARS plan in particular.

In the plan there will be three products from MEDLARS: INDEX MEDICUS; recurring bibliographies, possibly as many as 50 different ones at frequent intervals; and one-question-one-shot answers. It is thought that there is a possibility that the number of entries per article may increase to the point where an average will be as high as 10 terms ("access points").

It is expected that INDEX MEDICUS for January 1964 should be produced by the new system being designed and assembled by General Electric for the National Library of Medicine.

May 2 (Thursday)

A lecture and discussion of experiences of the Library of Congress in studying automation and/or mechanization for libraries was presented before the Task Force and members of the National Agricultural Library staff by Mr. Dubester. He gave details of a study made by specialists employed by the Library of Congress with a \$100,000 grant from the Council of Library Resources. Here are given some of the highlights of the study as described by Mr. Dubester:

The study team surveyed costs and found that all automation systems cost more. They studied the advantages in improved functions; concluded that an automation system would involve eliminating unnecessary operations to pay for the automation. They located functions that take most time, such as fingering through card files, and worked out costs per search. They studied the benefits of eliminating duplication in Cataloging (there are about 50,000,000 items in the Library of Congress.) They studied projecting into the future the benefits of automation in cataloging. In the end they concluded the requirements constitute the basis to be sought. "What do we want with an automatic Library? To make it easier for the user? Or, to make it easier for the Librarian?"

The Library of Congress study resulted in the conclusion that the storage capacity of computers is small - "wouldn't hold the Library of Congress catalogs". "Library of Congress would need about a thousand machines - would cost five million dollars to



automate the whole catalog - mail by jet plane from New York to San Francisco would be cheaper than a telephone request answered by computer". Mr. Dubester's advice to the Task Force was expressed thus: "Find out what the library of the future is to be. No library should mechanize for the present, but for the future."

May 3 (Thursday)

Dr. Adkinson of the Office of Science Information, National Science Foundation, helped the Task Force a great deal by contributing a lecture on research intelligence and its dissemination as related in particular to library systems. He first congratulated USDA's information system and pointed out the Department's international responsibilities in this field. He then defined clearly the role of the National Science Foundation - to provide or make provision for all research in a coordinating, but not an operating research agency. The Foundation proposes to strengthen good information systems, to help and advise other agencies, but not to dictate to them. He spoke of the importance of identifying the goal of the National Agricultural Library, that it should be considered a nationwide system, with close relations with other national libraries and prepared to carry on a continuous cooperative program with international libraries. Agricultural information published in English versus other languages, he said, is "fifty-fifty". "Improve indexing and bibliographies before you choose a machine", he cautioned, "otherwise there will be millions going down the drain". He further cautioned "A machine is a dumb thing. It could help in selecting, arranging, etc., but it cannot assist in actual library research".

To partially meet the science information glut, Dr. Adkinson enumerated some of the changes needed before it can be furnished quickly to all scientists: We need better titles, more informative ones, for use in machines. We need an abstract with every paper, and some method of selectiveness in furnishing titles to leaders of science (there are about 2,000 such leaders), Dr. Adkinson said. Leaders of science depend on reprints, meetings, letters, etc., to keep up to date; while below that the scientists depend more on libraries.

May 8 (Tuesday)

The Task Force went to the Patent Office for a meeting with, and a lecture from Mr. Frome of the Research and Development Division. His subject was Retrieval of Information by the Division which is responsible for the storing of the world's literature on patents.

Mr. Frome appeared to be thoroughly familiar with computers and their use in information storage and retrieval. He described input procedures where card punchers do not need to look up codes, but type in names and terms which are converted to codes on punch cards through computer look-up. He urged that the National Agricultural Library aim for a goal of 25 access points per article indexed, as that would give precise retrieval at a cost very little more than indexing with 10 access points. He gave a detailed account of steps for implementation of a computer scheme for a library from the analyzer's part in determining the key words, through punching, costs in personnel, cards, machines, etc., to bibliography making and easy access to all information in the library.

The importance of analyzers was discussed. Mr. Frome was of the opinion that analyzers of material for computer use should be highly skilled and with sound education, as well as experienced enough to realize the importance of the analysis. In his plan to put information about 100,000 insecticides on tape, he had 40 chemists engaged in analyzing literature for the development of access points to patents.

Mr. Frome said he would be glad to assist on technical problems and design requirements, if his services were needed in future. He referred the group to the Patent Office "Revised Steroid Search System Coding Manual" for further insight into the Patent Office activities in the field of information storage and retrieval.

May 11 (Friday)

The Task Force spent the afternoon at the Bureau of Standards to hear discussions of the Bureau's activities that are in any way applicable to retrieval of scientific information. Dr. Sam Alexander, Director of the Data Processing Systems Division, gave a detailed account of the Division's work which is of utmost importance to any Federal agency planning use of computers or other machines for information storage and retrieval. Current and recent projects of the Division include: development of a design for the Bureau of Ships system for recovery of correspondence; recovery of microfilm through a machine of the E-K Lodestar type: automatic ordering - probably for the Department of Defense; and a system for looking up chemical compounds by name and structure and spotting chemicals of given properties or having specified structural attributes. A basic problem in which the Division is concerned is that of putting graphic and tabular information into machine usable form.

In discussing the Division's work of designing and building computers and putting them into operation, Dr. Alexander said that although equipment amounting to \$500,000,000 to \$400,000,000 was sold last year, much caution and revision is required even in computers for straight data work; and thus far the machines do not show up too well in Library work.

The Division keeps records on all known research on information communications and processing techniques. The techniques include: 1, machine translation; 2, device for character recognition; 3, facsimile recovery and reproduction; and 4, relation of automation theory to information retrieval problems.

Mrs. Marden, assistant to Dr. Alexander, explained some of the rudimentary devices for information storage and retrieval, including the Peekaboo card system.

The third speaker, Mr. Patrick Doyle, is working as a consultant with the Office of Technical Services, Department of Commerce. He is trying to develop an automatically produced publication-announcement bulletin in which it will be easy to

find desired material. It appears that the KWIC type of system is among those being considered, and that an author index and a journal index may be required in addition to the title index. Mr. Doyle was engaged in a project to prepare punch cards to put in a computer for an index for NATIONAL AERONAUTICS at one stroke. This would lessen costs considerably and Mr. Doyle recommended such a system for the National Agricultural Library and offered his services for guidance if it should be considered.

A fourth speaker is working on development of a machine of the "Rapid Selector" type, with material stored on file and retrieval by means of code recognition. He has also been working on refinement of the E-K Lodestar, a device for rapid retrieval and reproduction of film. Features under consideration include: 1, subject-matter search of the film; 2, subject-matter search on the film itself, as on the Rapid Selector; 3, hard copy production of film strips; and 4, production of copies of film strips.

In a tour of the research laboratories and testing rooms, the Task Force observed several types of computers and other machines - the Rapid Selector, a Lodestar such as is used by Sears Roebuck, another machine that can be stopped to make hard copies, the "Recordac", just completed, the SEAC, oldest computer in existence, used now only for experimental work, and the magnificent new "Pilot", estimated to be 100 to 1,000 times faster than the SEAC.

May 14 (Monday)

A Remington Rand demonstration of the UNIVAC set-up (The ASTIA system) was presented in a USDA conference room for members of the Task Force and the Library staff. The demonstrators gave some results of their experiences with information storage and retrieval, especially storage, and functions and problems of analyzers in getting the information into the machines. In this work, an analyzing division is needed to read and sort the scientific reports and other material into subjects. A thesaurus is needed - a thesaurus of terms used by scientists of different fields - for use in assigning descriptors, and for automatic indexing. Abstracts can be arranged for publication by machine; group papers for meetings can be arranged into sessions, and sessions can be scheduled. The first Index was produced by UNIVAC. It is not recommended, however, for a Retrieval System such as is needed by the National Agricultural Library, according to the demonstrators.

May 15, (Tuesday)

A trip to ASTIA (Armed Services Technical Information Agency) occupied the morning, as Task Force members toured installations for study of the system used to produce bibliography reference, announcements, semi-monthly and semi-quarterly documents, important reports and other printed materials required by the Armed Forces around the world.

When reports are received in ASTIA they are all microfilmed, the microfilm is retained as a permanent record, and the original report copies (ten are required) are used, except for the master copy, to supply working requirements. If a report is considered inactive, all copies are discarded except the microfilm. Reports that require more than 10 copies are duplicated by Xerox plate and then multilithed. About 50,000 reports are processed each year.

Colonel Vaun told of plans to investigate the broad problem of handling scientific information, known as the "19 Point Program". ASTIA will utilize the services of 500 representatives of industry, apparently on a rotation basis, in a 5-year study. Invitations have gone out for 200 graduate students to conduct research in the problem. Fifty will receive Ph. D's, and 150 will receive Master's degrees as a result. It evidently is the beginning of a broad plan to coordinate ASTIA's information with information from industries, universities, and other sources.

May 31 (Thursday)

Mr. Heiliger, University of Illinois Librarian, Chicago, talked to Task Force members on his library's plan to automate certain phases of operations. His main point was that analyses of library functions (flow charts, etc.) are best carried out by personnel of the Library. The results of this study have been published.

## C I R C U L A T I O N

### LISTS OF CHARTS AND STATISTICAL TABLES

#### Discharged to Users in a 3 month period:

Table	D 1	By Form of Material and by User Groups
	D 2	By Origin of Material
	D 3	U. S. Department of Agriculture User Group by Agency
	D 4	Number of Organizations/Individuals and Frequency of Filled Requests

#### Age of Material Discharged:

Table	D 5	Pieces Published in Specified Periods, by User Groups
	D 6	Pieces Published in Year Shown or Earlier; Number of Pieces and Percentage of Total, by User Groups
Fig.	D 7	Age of Material by User Groups: U. S. Department of Agriculture, Other than USDA, and All Users

#### Classification and Frequency of Use of Material Discharged:

Table	D 8	Number of Titles and Total Requests by Classification Groups
	D 9	Frequency of Requests for Titles by Classification Groups
	- -	Frequency List of the 151 Titles Requested 10 Times or More
	- -	Alphabetical List of the 496 Titles Requested 5 Times or More



Table D 1

National Agricultural Library  
Discharges to Users in a three month period in 1962  
by Form of material and by User group

User Groups	Loans				Rapid Copy in Lieu of Loan	Microfilm & photocopy in Lieu of Loan	Total Requests Filled	
	Circulated to Users 1/		Interlibrary					
U.S. Govt. and International:	Pct.	Pieces	Pct.	Pieces	Pct.	Pieces	Pct.	Pieces
Dept. of Agriculture . . . .	72.3	10,590	-	-	97.3	3,589	81	14,260
Other government and International . . . . .	16.8	2,454	543	-	0.4	15	12	3,024
Sub-Total . . . . .	89.1	13,044	66.5	543	97.7	3,604	5.0	17,284
Other:								
Individuals . . . . .		607	-	-		52	681	1,340
Private Organizations, Business and Local Govts.		420	117	-		14	542	1,093
Educational Institutions		543	140	-		18	138	839
Foreign . . . . .		26	17	-		1	388	432
Sub-Total . . . . .	10.9%	1,596	33.5	274	2.3	85	95.0	3,704
Grand Total . . .	100.0%	14,640	100.0	817	100.0	3,689	100.0	20,988
Form of material, % of total . . . . .		69.8%		3.9%		17.5%		8.8%
								100.0%

1/ Not including NAL Staff.



# DISCHARGE OF MATERIAL FROM THE NATIONAL AGRICULTURAL LIBRARY

An Analysis of Material and Users in a 3 month period in 1962

## GENERAL

All material that was discharged to users by NAL in a three month period has been analyzed according to:

1. Material Form: Loans, rapid copy in lieu of loan, and microfilm or photocopy in lieu of loan
2. Origin of material
3. Users:
  - A. U.S. Department of Agriculture, by agency
  - B. Other U.S. Government and International
  - C. Educational Institutions
  - D. Private Organizations, Businesses, and Local governments
  - E. Foreign Governments
  - F. Individuals
4. Age or Material discharged
5. Material classified according to call number, a frequency count on the number of times the publication was discharged and identification of publications discharged 5 or more times.

## MATERIAL FORM

Of the material discharged to users in a 3 month period in 1962, 70 percent was loaned through circulating to users (not including NAL staff), 4 percent was through interlibrary loan, and 26 percent in the form of copy in lieu of loan. The 26 percent consisted of 17 percent Rapid Copy and 9 percent microfilm or photocopy. For the Department of Agriculture users, 74 percent of the material was discharged through loan (circulated). The copy in lieu of loan was 25 percent Rapid Copy, and less than 1 percent was microfilm or photocopy. Detail of form by user groups is shown in Tables D 1 and D 3.

## ORIGIN OF MATERIAL

As a basis for determining the language of the discharged material, publications loaned to users during the 3 month period were classified to show: (1) published in the United States, (2) published in English speaking countries except the United States, and (3) published in all other countries. The country in which the documents are published will provide a satisfactory basis for classifying material into English or foreign language. The list of Serials Currently Received in the Library, issued July 1, 1957 (Miscellaneous Publication 765) was used to determine where the document was published. Data omit interlibrary loan or copy in lieu of loan.

The above analysis showed that 63 percent of the material loaned to users during the 3 month period was published in the United States, and 37 percent outside the States. There was 27 percent published in other than English speaking countries.

TABLE D 2

National Agricultural Library - Discharges of Loans to users in a 3 month period in 1962 by Origin of Material

User Groups	Percent by User	PLACE OF PUBLICATION			Total
		United States	English speaking except U.S.	Other Foreign	
		No.	No.	No.	No.
USDA Agencies	72.3 o/o	6876	1018	2696	10590
Other U. S. Gov. t'	16.8 o/o	1369	342	743	2454
Other Users	10.9 o/o	1066	81	449	1596
Total	100.0 o/o	9311	1441	3888	14640
Percent by Origin of Material		63.6 o/o	9.8 o/o	26.6 o/o	100.0

## USERS

Out of a total of 20,988 requests filled in the 3 month period the Department of Agriculture accounted for 68 percent of the total. Other U. S. government and international organizations accounted for 14 percent with all other users totaling 18 percent.

### U. S. Department of Agriculture:

In the 3 month period analyzed, the Department requests that were filled totaled 14,260 (68 percent). Material was supplied to personnel in 25 agencies, but Agricultural Research Service (ARS) was the leading user with 6,293 pieces withdrawn or 44 percent of the Department total. For ARS, about 1/4 of the material was Rapid Copy and the other 3/4 was documents loaned, the same relationship shown in the form of material for all of the Department. The relationship was reversed for the Forest Service, the second largest Department user (18 percent). About 2/3 of the material withdrawn was Rapid Copy in lieu of loan and 1/3 was documents loaned. Economic Research Service was the third ranking user in the Department, accounting for 14 percent of the

NATIONAL AGRICULTURAL LIBRARY

Table D 3

Material Discharged to Users in a three month period in 1962

Total Requests filled for the Department of Agriculture by Agency

USDA Agency	Loans Circulated to Users		In Lieu of Rapid Copy		Loan Micro- film, Photo- copy	Total Requests Filled	
	Pct.	Pieces	Pct.	Pieces	Pieces	Pct.	Pieces
1. ARS	43.2	4570	46.7	1675	48	44.1	6293
2. FS	7.9	836	50.3	1805	-	18.5	2641
3. ERS	19.0	2007	0.1	3	-	14.1	2010
4. AMS	6.3	665	2.0	70	32	5.4	767
5. FAS	5.3	559		-	-	3.9	559
6. SCS	3.4	356		33	1	2.7	390
7. REA	2.3	243		1	-	1.7	244
8. ASCS	2.1	226		-	-	1.6	226
9. FES		178		1	-	1.3	179
10. OGC		127				0.9	127
11. SRS		119				0.8	119
12. INF		116				0.8	116
13. FCA		113				0.8	113
14. FCS		78				0.5	78
15. SEC		77				0.5	77
16. FHA		68				0.5	68
17. MASD		55				0.4	55
18. Dept. Administ.		47				0.3	47
19. CSESS		39		1		0.3	40
20. Grad. School		38				0.3	38
21. P&O		27				0.2	27
22. FCIC		19				0.1	19
23. ICAC		11				0.1	11
24. ORAD		9				0.1	9
25. CEA		7				0.1	7
Total	100	10,590	100	3589	81	100	14,260
Form of material % of total		74.2%		25.2%	0.6%		100%

Discharges to Users in a 3 Month Period in 1962

Number of Organizations/Individuals and the Frequency of Filled Requests

Table D 4

Material	User Groups				Total
	Individuals	Private Business L/	Educational Institutions	Foreign	
Loans circulated:					
Number of Users .....	160	65	59	8	292
Requests filled, pieces .....	607	420	543	26	1596
Interlibrary Loan:					
Number of Users .....	-	37	62	7	106
Requests filled, pieces .....	-	117	140	17	274
Copy--Microfilm and Photo:					
Number of Users .....	392	59	21	45	517
Requests filled, pieces .....	681	542	138	388	1749
Total Material:					
Number of Users .....	552	161	142	60	915
Requests filled, pieces .....	1288	1079	821	431	3619
Average per user .....	2.3	6.7	5.8	7.2	4.0
Highest number of Requests from one user .....	48	91	83	44	

L/ Private Organizations, Businesses, and local governments.



Table D 5

Material Discharged to Users in 3 month period  
 Pieces published in specified periods by user groups

Material includes Loans, rapid copy and photocopy

Pieces Published within Periods Shown	Pieces by User groups				Percent of total All Users
	U.S. Govt.		Other Users	All Users	
	Dept. of Agri.	Other U.S. Govt.			
1962 (Part of year)	1049	174	299	1522	8
61	3163	453	446	4062	20
60	1562	273	265	2100	10
59	882	185	185	1252	7
58	653	123	157	933	4
1953-57	2112	499	592	3203	16
1948-52	1320	348	359	2027	11
1943-47	588	148	169	905	4
1938-42	634	150	175	959	5
1933-37	408	122	200	730	3
1928-32	306	98	145	549	3
1923-27	180	70	101	351	2
1918-22	128	43	43	214	1
1913-1917	112	36	58	206	1
1908-1912	99	33	52	184	1
1907 or earlier	414	96	300	810	4
Total pieces with date	13,610	2,851	3,546	20,007	100
Date not shown	650	173	158	981	
Total pieces dis- charged	14,260	3,024	3,704	20,988	

Material Discharged to Users in 3 month period  
Pieces published in year shown or earlier  
Cumulative totals

Table D 6

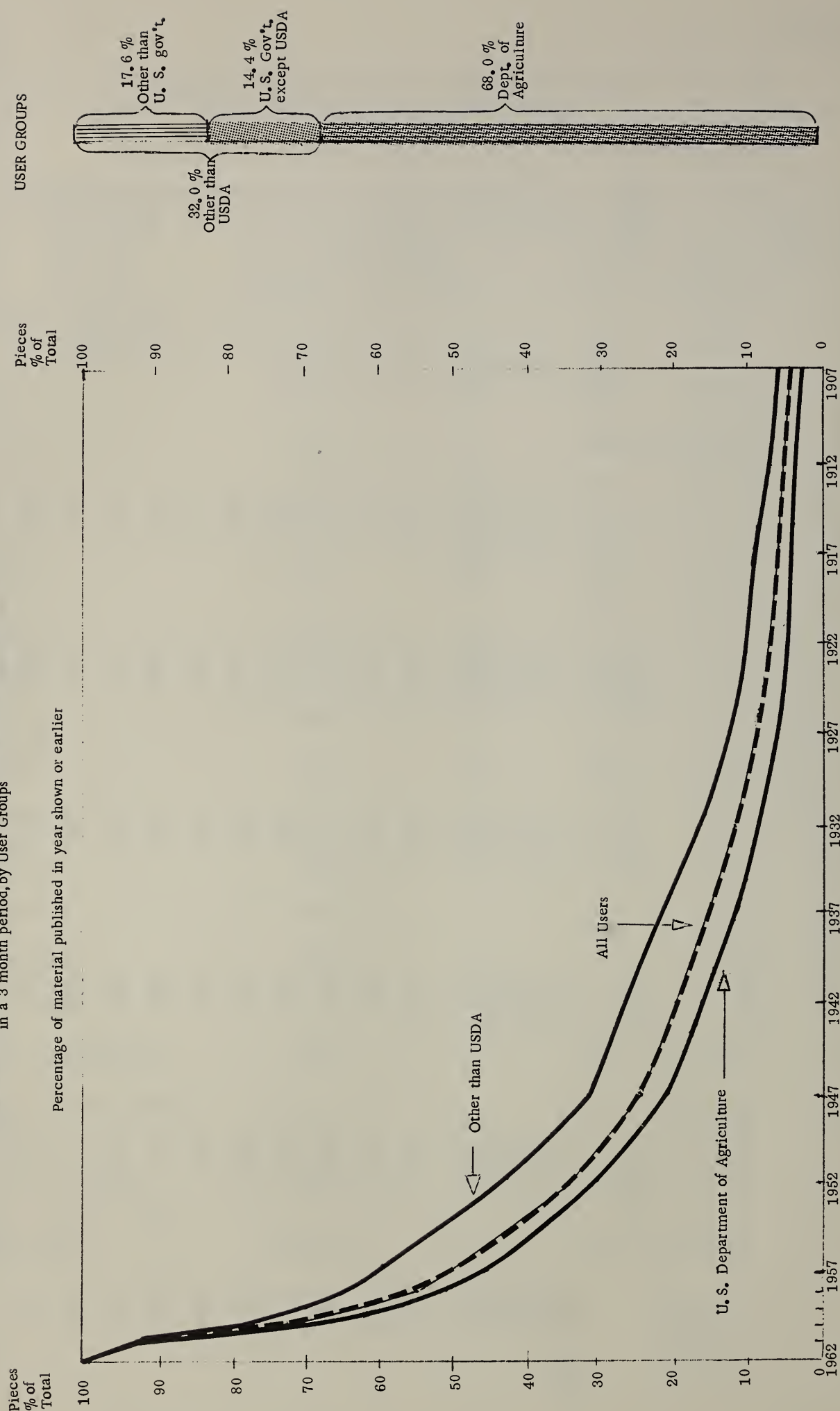
Material includes Loans, Rapid copy, and photocopy

Published in year shown or earlier (Cumulative)	Pieces by User Groups					Percent of Total		
	U. S. Government		Other than U. S. Government (3)	Other than Dept. of Agriculture (2+3)	All Users (1+2+3)	Dept. of Agriculture	Other than Dept. of Agriculture	All Users
	Dept. of Agriculture (1)	Other U. S. Government (2)						
1/June 1962	13,610	2,851	3,546	6,397	20,007	100.0	100.0	100.0
1961	12,561	2,677	3,247	5,924	18,485	92.3	92.6	92.4
1960	9,398	2,224	2,801	5,025	14,423	69.1	78.6	72.1
1959	7,836	1,951	2,536	4,487	12,323	57.6	70.1	61.6
1958	6,954	1,766	2,351	4,117	11,071	51.1	64.4	55.3
1957	6,301	1,643	2,194	3,837	10,138	46.3	60.0	50.7
1952	4,189	1,144	1,602	2,746	6,935	30.8	42.9	34.7
1947	2,869	796	1,243	2,039	4,908	21.1	31.9	24.5
1942	2,281	648	1,074	1,722	4,003	16.8	26.9	20.0
1937	1,647	498	899	1,397	3,044	12.1	21.8	15.2
1932	1,239	376	699	1,075	2,314	9.1	16.8	11.6
1927	933	278	554	832	1,765	6.9	13.0	8.8
1922	753	208	453	661	1,414	5.5	10.3	7.1
1917	625	165	410	575	1,200	4.6	9.0	6.0
1912	513	129	352	481	994	3.8	7.5	5.0
1907	414	96	300	396	810	3.0	6.2	4.0

1/ June estimated as most recent publication date, since survey related to material circulated in the period May 1 to July 31, 1962.

Fig. D 7

# AGE OF MATERIAL DISCHARGED IN NATIONAL AGRICULTURAL LIBRARY in a 3 month period, by User Groups





Department's material, practically all of which was in the form of documents loaned. The other 22 agencies accounted for the remaining 23 percent, with no one agency accounting for more than 5 percent of the material.

#### Other than "U. S. Government and International Organizations":

There were 3,704 requests filled for this group. About half of the material was copy in lieu of loan, with microfilm or photocopy making up most of this copy form. Individuals made up the largest segment of this group accounting for 1,340 requests filled, followed by private organizations, businesses and local governments with 1,093 requests filled, Educational Institutions with 839 and foreign governments with 432.

To get some measure of the number of organizations or individuals outside of the Government who received material from NAL as well as the frequency of requests within the 3 month period, an analysis was made of the material withdrawn by this user group. This detail is shown in Table D 4.

There was an average of 4 requests filled per organization or individual. Following are the averages by user groups, with the highest number of requests filled for one individual or organization in parenthesis: Private organizations, businesses and local governments 6.7 average (91 requests filled by one organization); educational institutions, 5.8 (83); foreign 7.2 (44); individuals 2.3 (48).

### AGE OF MATERIAL DISCHARGED

#### General

Material discharged in the 3 month period was sorted according to date of publication. Table D 5 shows the number of pieces discharged that were published in 5 year period through 1957 and annually from 1958 to mid June, by user groups. To analyze this in terms of age of material the number of pieces are cumulated so that for any year shown the number represents the pieces published in that year or earlier. These data are presented in Table D 6. Also included in the table are the numbers expressed as percent of total pieces for the user groups: (1) Department of Agriculture (2) Other than the Department of Agriculture and (3) All Users. Fig. D 7 shows these percentages which are described as age of material for the 3 groups. It should be noted that about a half a year is included in the 1962 statistics. June is shown as the cut off publication date for 1962 since most of the material included in the study was discharged in the period May 1 to July 31, 1962.

#### All Users

Use of material declines with age. Or, stated in another way, as material increases in age, the frequency of requests diminishes. The question is, what is the rate of decline? Fig. D 7 shows this pattern of decline.

Requests diminish rapidly for material published during the most recent five years. Requests filled for publications dated 1961 through mid-1962 represented 28 percent of the total requests filled during the 3 month survey period. This dropped to 10 percent for 1960 material, 7 percent for 1959 material, and 4 percent for 1958 material. Thus, half of the material withdrawn from the library in the 3 months studied, was published since 1957. The rate of decline of requests for material published in 1957 or earlier is much slower. The frequency of request for material published in the 5-year periods dropped to average about 3 percent a year, then to 2 percent a year, 1 percent a year for each the next 2 periods, and then to less than 1 percent for the 5-year periods from 1937 back to 1907. Stated in another way:

90 percent of the material withdrawn was published in	1961 or earlier
72 percent	1960 or earlier
62 percent	1959 or earlier
55 percent	1958 or earlier
51 percent	1958 or earlier
35 percent	1952 or earlier
24 percent	1947 or earlier
20 percent	1942 or earlier
15 percent	1937 or earlier

#### USDA Users

The Department of Agriculture users accounted for 68 percent of the total material withdrawn from the Library in the 3 month period analyzed. Department users make more of a demand on current publications than do other NAL users. Material published in the period 1958 through mid-1962 represented 54 percent of the total withdrawn by Department users, but only 40 percent withdrawn by other users. This relationship in the rate of material discharged held true for each year in the 1958-62 period although each of the user group rates decreased rapidly with the increased age of material. Conversely, the demand for material published in 1957 or earlier is greater for users from outside of the Department. Non-USDA users probably have access to current literature in their own location, but draw on the NAL collection as a back up source for older material. See Fig. D 7.

### CLASSIFICATION AND FREQUENCY OF USE OF MATERIAL DISCHARGED

Request Forms (Ad-245) for all material loaned through circulation to users in the 3 month period in 1962 were sorted according to Call Number. In this period there were 6,626 titles requested a total of 13,068 times which averages 2 requests per title. The frequency of requests for each title was recorded. A title may represent more than one piece since a journal title will have one call number regardless of the publication frequency, that is, it may be a weekly, monthly, annual, or a separate.

National Agricultural Library  
Discharges to Users in a 3 Month Period in 1962

Table D 8

Number of Titles and Total Requests by Classification Group

Number of Titles and Total Requests by Classification Group (Continued)		Titles Requests	
Call No.	Classification	No.	No.
AGRICULTURE			
1-1.9	USDA	216	545
2-29	Agriculture Boards, Societies, Congresses	351	657
30-38	Foreign Countries	67	100
40-50	General and Geographic Arrangement	407	752
53-56	Animal Husbandry	115	177
57	The Soil		
58	Fertilizer and Soil Amendments		
59-79	Agriculture Implements, Machinery and Processes		
	Crops	231	327
HORTICULTURE AND LANDSCAPE ART			
80-90	Horticultural Periodicals and General	283	425
91	Vegetables		
93-95	Pomology and Nuts		
96	Floriculture; flowers and ornamental plants and their culture		
97-98	Gardens and ornamental planting, Landscape art, parks, etc.		
FORESTRY			
99	Forestry	189	305
100-109	AGRICULTURAL COLLEGES AND EXPERIMENT STATIONS	179	553
110-145	GENERAL LITERATURE	110	143
148-195	UNITED STATES PUBLIC DOCUMENTS	183	283
200-239	REFERENCE BOOKS	138	205
240-243	BIBLIOGRAPHY, LIBRARY SCIENCE AND DOCUMENTATION	105	183
ECONOMIC SCIENCES			
249	Industrial and Office Management	56	94
250-273	Statistics	277	525
274	Law omitted	-	-
275-276	Education	102	142
ECONOMICS			
277-279	Economic History, Geography, and Conservation of natural resources	54	70
280	Economics; sociology in general subdivided geographically and Cooperation, subdivided by commodities	403	702
281-287	Agricultural economics	386	570
288-314	TECHNOLOGY	296	496
317-324	HOME ECONOMICS	13	52
MATHEMATICS- PHYSICAL SCIENCES			
325	Mathematics	64	85
330-346	Physical sciences	125	239
381-396	Chemistry	546	1432
398-408	Geology and mineralogy	19	37
BIOLOGICAL SCIENCES			
409-410	Natural history	141	337
411-415	Zoology	81	108
420-432	Entomology	237	470
433-447	Misc. orders of animals	317	798
448-449	Medicine and hygiene	134	368
450-464	Botany	553	1039
SCIENTIFIC PERIODICALS AND SOCIETIES			
470-475	Scientific periodicals	73	401
500-517	Learned societies	175	487
Total		6,626	13,068
Av. Requests per title			2.0

433



NAL Discharges to Users (Continued)

Frequency of Requests	148- 195	240- 239	240- 243	249	250- 273	275- 276	277- 279	280	281- 287	288- 314	317- 324
1	141	100	80	42	171	84	45	313	309	214	7
2	21	23	10	7	54	10	6	51	34	49	2
3	8	7	8	2	22	2	1	16	16	12	1
4	5	4	2	1	13	3	1	4	13	7	-
5	2	3	-	1	4	-	-	5	8	4	-
6	4	-	-	-	2	1	1	4	1	3	-
7	1	1	2	2	4	2	-	2	-	2	1
8	-	-	-	-	2	-	-	2	3	1	-
9	-	-	1	1	1	-	-	-	1	1	-
10	-	-	1	-	2	-	-	1	-	1	-
11	-	-	-	-	1	-	-	-	-	-	-
12	-	-	-	-	1	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	1
14	-	-	-	-	-	-	-	-	1	1	-
15	1	-	-	-	-	-	-	1	-	-	-
16	-	-	-	-	-	-	-	1	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-
19	-	-	1	-	-	-	-	1	-	-	1
20	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	1	-
28	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-
42	-	-	-	-	-	-	-	-	-	-	-
43	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-
54	-	-	-	-	-	-	-	-	-	-	-
58	-	-	-	-	-	-	-	-	-	-	-
Titles	183	138	105	56	277	102	54	403	386	296	13
Requests	283	205	183	94	525	142	70	702	570	496	52

## NAL Discharges to Users (Continued)

Frequency of Requests	325	330- 346	381- 396	398- 408	409- 410	411- 465	420- 432	433- 447	448- 449	450- 464	470- 475	500- 517
1 .....	54	93	323	14	83	63	161	182	63	388	28	81
2 .....	9	13	84	2	19	13	29	60	30	74	16	33
3 .....		3	45	1	12	3	17	23	8	32	5	26
4 .....		1	32	-	11	1	10	16	11	25	1	11
5 .....		4	9	1	4	-	6	5	5	14	2	5
6 .....		5	12	-	-	1	4	2	2	4	3	4
7 .....		1	5	-	2	-	2	6	5	-	3	5
8 .....		2	5	-	3	-	1	5	4	2	4	1
9 .....		1	2	-	1	-	3	1	-	6	2	2
10 .....		-	5	-	4	-	2	3	1	1	-	1
11 .....	-	1	6	1	-	-	-	4	2	2	2	1
12 .....	-	-	3	-	1	-	-	4	2	-	2	-
13 .....	1	-	1	-	-	-	-	-	-	-	-	3
14 .....		1	1	-	-	-	-	1	-	-	-	-
15 .....		-	5	-	-	-	-	2	-	-	-	-
16 .....		1	2	-	-	-	-	-	-	1	-	-
17 .....		-	-	-	1	-	-	1	1	1	-	-
18 .....		-	-	-	-	-	1	-	-	-	-	-
19 .....		-	1	-	-	-	1	-	-	-	-	-
20 .....		-	1	-	-	-	-	-	-	1	-	-
21 .....		-	-	-	-	-	-	-	-	-	-	-
22 .....		-	-	-	-	-	-	1	-	-	-	1
23 .....		-	1	-	-	-	-	-	-	-	1	-
24 .....		-	-	-	-	-	-	-	-	-	1	-
25 .....		-	-	-	-	-	-	-	-	-	1	1
26 .....		-	-	-	-	-	-	-	-	-	-	-
27 .....		-	-	-	-	-	-	-	-	1	-	-
28 .....		-	-	-	-	-	-	-	-	-	1	-
29 .....		-	-	-	-	-	-	1	-	-	-	-
30 .....		-	-	-	-	-	-	-	-	-	-	-
31 .....		-	1	-	-	-	-	-	-	1	-	-
42 .....		-	-	-	-	-	-	-	-	-	1	-
43 .....		-	1	-	-	-	-	-	-	-	-	-
46 .....		-	1	-	-	-	-	-	-	-	-	-
54 .....		-	-	-	-	-	-	-	-	-	-	-
58 .....		-	-	-	-	-	-	-	-	-	1	-
Titles	64	125	546	19	141	81	237	317	134	553	73	175
Requests	85	239	1432	37	337	108	470	798	368	1039	401	487

Table D 8 shows 40 classification groups and the number of titles and total requests by classification groups. Table D 9 shows a frequency table of requests which ranges from 1 to 58 requests for the 40 classification groups. This is followed by a frequency list of the 151 titles requested 10 or more times.

Analyzing the frequency of requests in large classification groups, the group with the highest frequency average was scientific periodicals (call numbers 470 to 475) in which there were 73 titles requested 401 times to average 5.49 per title. In this group were 5 journals with a high request frequency: Nature, 58 times; Science, 42 times; National Geographic, 28 times; Current Science, 25 times; and Scientific American, 24 times.

Agricultural College and Experiment Stations (call numbers 100 to 109) showed 179 titles requested 443 times, an average of 3.09 per title, but none requested more than 20 times. Medicine and Hygiene (call Numbers 448-449) also had a high frequency average, but no one title rated high.

In the Learned Societies classification (call numbers 500-517), the group ranking 3rd in high request frequency, there were two titles each requested 25 times, namely Comptes Rendus Des Travaux Du Laboratoire Carisberg and Annals of the New York Academy of Science. The Chemistry group (call numbers 381-396), had an average frequency rate of 2.62 per piece, but this group included 5 titles that rated high. These were the Journal of Biological Chemistry, requested 46 times; Biochemical Journal, 43; Journal of American Chemical Society, 31; Journal of Nutrition, 24; and Analytical Chemistry, 20 times.

#### FREQUENCY LIST OF TITLES REQUESTED TEN TIMES OR MORE

<u>CALL NUMBER</u>	<u>TITLE</u>	<u>NO. REQUESTS</u>
472 N21	Nature	58
280.8 J822	Journal of Farm Economics	54
381 J824	Journal of Biological Chemistry	46
382 B52	Biochemical Journal	43
470 Sci2	Science	42
450 Am36	American Journal of Botany	31
381 Am33J	Journal of the American Chemical Society	31
280.8 Am32	American Economic Review	30
447.8 J82	Journal of Physiology	30
470 N213	National Geographic Magazine	28
307.8 J82	American Oil Chemists Society, Journal	27
450 P692	Plant Physiology	27
1 Ag84Y	U.S. Dept. of Agriculture. Yearbook	26
505 P21	Comptes Rendus Des Travaux Du Laboratoire Carisberg	25
475 Sci23	Current Science	25
1 Ag84M	U.S. Dept. of Agriculture. Miscellaneous publication	25
44.8 J822	Journal of Dairy Science	24
389.8 J82	Journal of Nutrition	24
470 Sci25	Scientific American	24
500 N484	Annals of the New York Academy of Science	23
1 Ag84Te	U.S. Dept. of Agriculture. Technical bulletin	23
442.8 Au7	Australian Journal of Biological Sciences	22
381 J825A	Analytical Chemistry	20
450 B652	Botanical Gazette. Chicago, Ill.	20
1 Ag84J	U.S. Dept. of Agriculture. Journal of Agricultural Research	20
381 B522	Biochemica et Biophysica Acta	19
421 C16	Canadian Entomologist	19
241 C734A	Commonwealth Bureau of Soil Science	19
321.8 C762	Consumer Reports	19
280.8 Ec78	Econometrica	19
100 Io92	Iowa Agricultural Experiment Station, Research Bulletin	19
47.8 Am33P	Poultry Science	19
1 Ag84F	U.S. Dept. of Agriculture. Farmers bulletin	19
421 J822	Journal of Economic Entomology	18
1 Ag84Mr	U.S. Dept. of Agriculture. Marketing Research Report	18
81 So12	American Society of Horticultural Science. Proceedings	17
450 C94	Curtis' Botanical Magazine. London, Eng.	17
448.3 J82	Journal of Bacteriology	17
410.9 L84P	London, England. Zoological Society, Proceedings	17
1 Ag84C	U.S. Dept. of Agriculture. Circular	17



<u>CALL NUMBER</u>	<u>TITLE</u>	<u>NO. REQUESTS</u>
1 So32F 1955	U. S. Soil Conservation Service. Soil Survey Reports. Series 1955	17
381 Ar2	Archives of Biochemistry and Biophysics	16
450 B6527	Botanical Review. New York, N. Y.	16
442.9 C14	Cambridge [England] Philosophical Society, Biological Reviews	16
280.8 H262	Harvard Business Review	16
381 J8223	Journal of Agricultural and Food Chemistry	16
44.8 J823	Journal of Dairy Research	16
41.8 V641	Veterinary Record	16
385 Ac82	Acta Chemica Scandinavica	15
389.8 J824	American Journal of Clinical Nutrition	15
382 M31C	Chemistry and Industry	15
442.9 P21	Comptes Soc. Biol.	15
389.8 F737	Food Engineering	15
280.8 Q2	Quarterly Journal of Economics	15
157.7 C76Ds	Survey of Current Business	15
442.8 B523	Biologisches Zentralblatt	14
442.8 B522	Biometrika	14
385 H36	Helvetica Chemica Acta	14
100 In2P	Indiana Agricultural Experiment Station, Bulletin	14
286.8 N488	New York Times	14
334.8 Sp3	Spectrochimica Acta	14
302.8 T162	TAPPI	14
41.8 Au72	Australian Veterinary Journal	13
100 C12S	California Agricultural Experiment Station	13
100 C12Cag	California Agriculture	13
500 EL4	Elisha Mitchell Scientific Society, Journal	13
396.8 J82	Journal of Pharmacology and Experimental Therapeutics	13
514 Sy2	Linnean Society of New South Wales. Proceedings	13
325 E23	Methods of Correlation	13
500 N21P	National Academy of Science, Proceedings	13
1.9 P69P	Plant Disease Reporter	13
470 Am36	American Naturalist Herpetology	12
251 Am3	American Statistical Association Journal	12
321.8 C76	Consumers Research Bulletin	12
2.2 In283	Indian Farming	12
41.8 Am3	Journal of American Veterinary Medical Association	12
448.39 So12	Journal of Applied Bacteriology	12
381 As7	Journal of Associated Official Agricultural Chemists	12
99.8 F768	Journal of Forestry	12
448.3 J823	Journal of General Microbiology	12
444.8 J826	Journal of Morphology	12
381 J822	Journal of Physical Chemistry	12
100 M58S	Michigan Agricultural Experiment Station, Bulletin	12
25 P542	Philippine Agriculturist	12
440.8 Q2	Quarterly Journal of Microscopical Science	12
474 Z3	Zeitschrift für Naturforschung	12
444.8 Z3	Zeitschrift für Vergleichende Physiologie Jr.	12
410 R92	Zoologicheskii Zhurnal, U. S. S. R.	12
381 An1	Analytica Chimica Acta	11
450 An7	Annals of Botany	11
251.8 An7	Annals of Mathematical Statistics	11
442.8 Ar26	Archiv für Mikrobiologie; Zeitschrift für die Erforschung der Pflanzlichen Mikroorganismen. Jr.	11
1.916 B471	Bibliography of Agriculture	11
442.8 B52	Biological Bulletin	11
448.8 B77	British Medical Journal	11
511 P444A	Doklady Akademiia Nauk SSSR Serii Biologicheskaiia	
475 Ex7	Experientia	11
442.8 G28	Genetics	11

<u>CALL NUMBER</u>	<u>TITLE</u>	<u>NO. REQUEST</u>
381 J825	Industrial and Engineering Chemistry	11
443 F18	Introduction to Quantitative Genetics	11
261 Is7S	Italy Statistics	11
385 J822	Journal of Biochemistry - Tokyo, Japan	11
403 J82	Journal of Geology	11
382 L84J	Journal of Chemical Society	11
100 K13S	Kansas Agricultural Experiment Station, Bulletin	11
100 K41	Kentucky Agricultural Experiment Station, Bulletin	11
100 L93	Louisiana Agricultural Experiment Station, Annual Report, Circular, Bulletin	11
474 N213	Naturwissenschaften	11
100 N813	North Dakota Agricultural Experiment Station, Bulletin	11
396.9 P49	Pharmaceutical Society of Japan, Journal	11
464.8 P56	Phytopathology	11
398.8 Q4	Quick Frozen Foods	11
382 F22	Transactions of the Faraday Society	11
1 Ag84Ab	U.S. Dept. of Agriculture. Agriculture information bulletin	11
1 Ag84B	U.S. Dept. of Agriculture. Bulletin	11
442.8 Uz1	Uzbekskii biologicheskii zhurnal	11
79.8 W41	Weeds	11
410 Z751S	Zoologische Jahrbucher, an. Jena, Germany. Abteilung für Systematik Okologie und Geographie der Tiere	11
507 R66	Accademia Nazionale dei Lincei	10
448.9 Am37	American Medical Association Journal, Scientific Edition	10
410 M58	American Midland Naturalist	10
396.9 Am33J	American Pharmaceutical Association, Journal, Scientific Edition	10
280.8 Am37	American Sociological Review	10
421 An72	Annual Review of Entomology	10
442.8 B5224	Biometrics	10
100 C76St	Connecticut Agricultural Experiment Station, Bulletin	10
451 D48	Deutsche Botanische Gesellschaft Berichte. Stuttgart, Germany	10
384 Z33	Die Chemie	10
410 Ec7	Ecology	10
81 F66	Florida State Horticultural Society, Proceedings	10
100 C12H	Hilgardia	10
442.8 B77	Journal of Experimental Biology	10
381 J829	Journal of Polymer Science	10
100 M693	Missouri Agricultural Experiment Station, Research Bulletin	10
269.5 St2M	Monthly Statistics of the Foreign Trade	10
100 Oh3S	Ohio Agricultural Experiment Station, Bulletin	10
80 P116	Pacific Coast Nurseryman	10
449.8 Ex8	Pest Control	10
241.7 R25	Referaty Zhurnal Biology	10
295.9 Am32J	Refrigeration Engineering	10
421 B41	Societe Entomologique de Belgique, Bulletin	10
56.9 So3	Soil Science Society of America, Proceedings	10
100 So82	South Dakota Agricultural Experiment Station, Bulletin	10
100 T31M	Texas Agricultural Experiment Station, Miscellaneous Publication	10
1 Ag84St	U.S. Dept. of Agriculture. Statistical bulletin	10
384 Z3	Zeitschrift für Analytische Chemie	10
384 Z38	Zeitschrift für Physiologische Chemie	10
TOTAL TITLES - 147		
TOTAL REQUESTS		2,294

## ALPHABETICAL LIST OF TITLES REQUESTED FIVE TIMES OR MORE

<u>CALL NUMBER</u>	<u>TITLE</u>	<u>NO. REQUESTED</u>
507 R66	Accademia Nazionale dei Lincei	10
256.03 Ac2	Accounts Relating to Trade and Navigation of the United Kingdom	7
385 Ac82	Acta Chemica Scandinavica	15
421 K96	Acta Entomologica Simica	5
448.3 Ac8	Acta Pathologica et Microbiologica	8
475 Ac8	Acta Tropica	5
30 Ad9	Advances in Agronomy	9
381 Ad93	Advances in Chemistry	8
280.19 M94	Africa, Its People and their Cultural History	6
30.98 A98	Agricultural History	9
30.98 A782	Agricultural History Review	6
281.9 AL15	Agricultural Production, Alaska	5
8 T73	Agricultural Society of Trinidad and Tobago	8
510 V67	Akademie der Wissenschaften Wien. Abt. I Mathematische Naturwissenschaftliche Klasse	5
410.9 AL62	Akademiia nauk Kazkhskoi SSR, Institut Zoologii, Trudy, Jr.	5
100 AL1S	Alabama Agricultural Experiment Station	5
500 Am33	American Academy of Arts and Sciences	6
97.31 Am32	American Camellia Yearbook	7
280.2 V892A	American Cooperatives	5
389.8 Am34	American Dietetic Association, Journal	8
306.8 Am3	American Dyestuff Reporter	9
280.8 Am32	American Economic Review	30
99.8 F762	American Forests	7
447.8 Am32	American Journal of Anatomy	5
450 Am36	American Journal of Botany	31
389.8 J824	American Journal of Clinical Nutrition	15
448.8 Am34	American Journal of Clinical Pathology	5
448.8 Am39	American Journal of Pathology	6
447.8 Am3	American Journal of Physiology	8
449.9 Am3J	American Journal of Public Health	8
470 Am34	American Journal of Science. New Haven, Conn.	8
41.8 Am3A	American Journal of Veterinary Research	7
48.9 Am3	American Kennel Club Stud Book Register	7
448.9 Am37	American Medical Association, Journal	10
410 M58	American Midland Naturalist	10
44.8 Am38	American Milk Review	7
470 Am36	American Naturalist Herpetology	12
307.8 J82	American Oil Chemists Society, Journal	27
396.9 Am33J	American Pharmaceutical Association, Journal, Scientific Edition	10
81 So12	American Society of Horticultural Science, Proceedings	17
280.8 Am37	American Sociological Review	10
251 Am3	American Statistical Association Journal	12
292.9 Am32J	American Waterworks Association, Journal	6
503 Am82	Amsterdam, Netherlands, Instituut voor de Tropen. Afdeling tropische producten	6
381 An1	Analytica Chimica Acta	11
381 J825A	Analytical Chemistry	20
447.8 An1	Anatomical Record	8
436.8 An7	Annales de Parasitologie Humaine et Comparee	6
410 An7	Annales de Sciences Naturelles. Zoologie et Biologie Animale, Jr.	7
385 An7	Annali di Chimica	5
442.8 An7	Annals of Applied Biology	9
450 An7	Annals of Botany	11
251.8 An7	Annals of Mathematical Statistics	11
500 N484	Annals of the New York Academy of Science	23
464.9 P562	Annals of the Phytopathological Society of Japan	5



<u>CALL NUMBER</u>	<u>TITLE</u>	<u>NO. REQUESTED</u>
382 B52	Biochemical Journal	43
381 B522	Biochimica et Biophysica Acta	19
442.8 B52	Biological Bulletin	11
442.8 B523	Biologisches Zentralblatt	14
442.8 B5224	Biometrics	10
442.8 B522	Biometrika	14
442.8 B5294Ae	BioPhysics	7
255.9 Es82B	Boletín de Comercio Exterior	5
450 B652	Botanical Gazette. Chicago, Ill.	20
450 B651	Botanical Magazine. Tokyo, Japan	6
450 B6527	Botanical Review. New York, N. Y.	16
450 En3B	Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie. Leipzig, Germany	5
451 B69	Boyce Thompson Institute for Plant Research, Yonkers, N. Y., Contributions	9
410 B77	British Journal of Animal Behavior	5
448.8 B77	British Medical Journal	11
41.8 V643	British Vet Journal	9
47.8 B782	Broiler Growing	5
512 So2	Bulgarska akademiia na naukite, Sofia. Doklady	5
24 K83	Bulletin Agricole du Congo Belge	5
22.5 In2	Bulletin Economique de l'Indochine	5
255.9 Es8B	Bulletin Henseul de Estadistica	8
421 B87	Bulletin of Entomological Research	9
280.8 Sy8	Business Week	8
100 C12Cag	California Agriculture	13
100 C12S	California Agricultural Experiment Station	13
442.9 C14	Cambridge [England] Philosophical Society, Biological Reviews	16
421 C16	Canadian Entomologist	19
470 C16E	Canadian Journal of Biochemistry and Physiology	9
470 C16C	Canadian Journal of Botany	8
41.8 C162	Canadian Journal of Comparative Medical and Veterinary Science	6
448.8 C162	Canadian Journal of Microbiology	7
470 C16D	Canadian Journal of Zoology	6
464.9 C16S	Canadian Plant Disease Survey	5
49.9 Ea72	Canadian Society of Animal Production	6
286.83 C16	Canner and Freezer	8
284.29 Sy6	Capital and Credit Needs in a Changing Agriculture	5
276 M36C	Catalog	7
49 C29	Cattleman	6
157.41 C33882	Census of Manufacturers	5
59.8 C33	Cereal Chemistry	7
381 EL2	Chemical Engineering	7
381 J825N	Chemical Engineering News	6
381 C425	Chemical Reviews	7
381 C426	Chemical Week	5
384 B45	Chemische Berichte	8
381 C424	Chemist Analyst	6
382 M31C	Chemistry and Industry	15
381 N213Na	Chemurgic Digest	5
385 C444	Chimia	5
80 C498	Citrus Magazine	6
286.9 Un34S	Commodity Trade Statistics	8
241 C734A	Commonwealth Bureau of Soil Science	19
390.9 C19	Comptes Rendus des Travaux du laboratoire	6
505 P21	Comptes Rendus Des Travaux Du Laboratoire Carisberg	25
442.9 P21	Comptes Soc. Biol.	15
100 C76St	Connecticut Agricultural Experiment Station, Bulletin	10
321.8 C762	Consumer Reports	19
321.8 C76	Consumers Research Bulletin	12

<u>CALL NUMBER</u>	<u>TITLE</u>	<u>NO. REQUESTED</u>
100 N48C	Cornell University, Agricultural Experiment Station, Bulletin	7
475 Sci23	Current Science	25
450 C94	Curtis' Botanical Magazine. London, Eng.	17
225 D142	Dairy Credit Book	5
44.8 D1426	Dairy Engineering	7
241 Im76	Dairy Science Abstract	7
251 Un356	Demographic Yearbook	5
451 D48	Deutsche Botanische Gesellschaft Berichte. Stuttgart, Germany	10
41.8 D482	Deutsche tierärztliche Wochenschrift	5
384 Z33	Die Chemie	10
241.8 M58	Dissertation Abstracts	9
511 Er4D	Dokladi Akademiia Nauk. Armienianskoi SSR	8
511 P444A	Doklady Akademiia Nauk SSSR Serii Biologicheskai	11
24 Ea74	East African Agricultural Journal	6
410 Ec7	Ecology	10
280.8 Ec78	Econometrica	19
450 Ec7	Economic Botany	5
280.8 Ec8226	Economic Development and Cultural Change	6
280.8 Ec72	Economic Journal	7
335.8 EL2	Electrical World	5
381 EL22J	Electrochemical Society	6
500 EL4	Elisha Mitchell Scientific Society, Journal	13
99.8 Em72	Empire Forestry Review	6
10 Em7	Empire Journal of Experimental Agriculture	6
158.6 B87	Employment and Earnings Statistics	6
220 En1	Encyclopedia Britannica	7
421 Em88	Entomological News	8
420 En82	Entomological Society of America, Annals	9
420 En86	Entomological Society of Southern Africa Journal, Pretoria, South Africa	7
475 Ex7	Experientia	11
442.8 Ex7	Experimental Cell Research	9
100 So82S	Farm and Home Research	7
6 F2212	Farm Journal	5
6 F22995	Farm Quarterly	8
24 So842	Farming in South Africa	7
1.9 Ec752F	Fats and Oils Situation	6
442.9 F31P	Federation of American Societies for Experimental Biology, Federation Proceedings	7
286.81 F322	Feedstuffs	8
384 C422	Fette, Seifen, Anstrichmittel	6
450 F66	Flora	8
100 F66S	Florida Agricultural Experiment Station, Bulletin	5
81 F66	Florida State Horticultural Society, Proceedings	10
389.8 F737	Food Engineering	15
389.8 F7389	Food Technology	6
99.8 F7692	Forest Farmer	5
99.8 F7632	Forest Science	5
99.8 F7623	Forestry Chronicle	5
249 G15	Gantt on Management	5
442.8 G28	Genetics	11
500 Am35G	Geographical Review	6
100 G295	Georgia Agricultural Research	5
265 St2A	Germany - Der Aussenhandel	8
424.8 G47	Gleanings in Bee Culture	5
280.8 H262	Harvard Business Review	16
385 H36	Helvetica Chemica Acta	14
97.21 D72	Herbs	6
100 C12H	Hilgardia	10
44.8 H65	Hoard's Dairyman	7

<u>CALL NUMBER</u>	<u>TITLE</u>	<u>NO. REQUESTED</u>
470 Io9	Iowa State College, Journal of Science	7
330.9 Is72B	Israel, Research Council	8
261 Is7S	Italy Statistics	11
450 P93J	Jahrbuecher fuer Wissenschaftliche Botanik	9
381 J8223	Journal of Agricultural and Food Chemistry	16
10 J822	Journal of Agricultural Science	9
41.8 Am3	Journal of American Veterinary Medical Association	12
49 J82	Journal of Animal Science	7
448.39 So12	Journal of Applied Bacteriology	12
381 As7	Journal of Associated Official Agricultural Chemists	12
381 As7	Journal of Bacteriology	17
385 J822	Journal of Biochemistry - Tokyo, Japan	11
381 J824	Journal of Biological Chemistry	46
442.8 J828	Journal of Biophysical and Biochemical Cytology	9
444.8 J822	Journal of Cellular and Comparative Physiology	7
381 J826	Journal of Chemical Education	6
334.8 J823	Journal of Chemical Physics	6
475 J824	Journal of Chromatography	8
410 J822	Journal of Comparative and Physiological Psychology	7
41.8 J82	Journal of Comparative Pathology	6
44.8 J823	Journal of Dairy Research	16
44.8 J822	Journal of Dairy Science	24
450 J829	Journal of Ecology. London, England	9
421 J822	Journal of Economic Entomology	18
442.8 B77	Journal of Experimental Biology	10
410 J825	Journal of Experimental Zoology	8
280.8 J822	Journal of Farm Economics	54
99.8 F768	Journal of Forestry	12
448.3 J823	Journal of General Microbiology	12
403 J82	Journal of Geology	11
442.8 Am3	Journal of Heredity	7
321.8 J82	Journal of Home Economics	7
421 J826	Journal of Insect Pathology	7
280.38 J82	Journal of Marketing	6
340.8 J82	Journal of Meteorology	6
44.8 J824	Journal of Milk and Food Technology	8
444.8 J826	Journal of Morphology	12
389.8 J82	Journal of Nutrition	24
334.8 Op7	Journal of Optica Society of America	8
448.8 J824	Journal of Parasitology	5
396.8 J82	Journal of Pharmacology and Experimental Therapeutics	13
381 J822	Journal of Physical Chemistry	12
447.8 J82	Journal of Physiology	30
381 J829	Journal of Polymer Science	10
475 J82	Journal of Scientific and Industrial Research	8
297.8 J82	Journal of Scientific Instruments	5
56.8 J822	Journal of Soil and Water Conservation	5
385 Ag8	Journal of the Agricultural Chemical Society of Japan	6
381 Am33J	Journal of the American Chemical Society	31
382 L84J	Journal of the Chemical Society	11
385 In27	Journal of the Indian Chemical Society	5
251 R81J	Journal of the Royal Statistical Society	7
382 So12	Journal of the Science of Food and Agriculture	9
410 J827	Journal of Wildlife Management	8
385 J82	Journal Society of Chemical Industries of Japan	9
100 K13S	Kansas Agricultural Experiment Station, Bulletin	11
420 K13	Kansas Entomological Society Journal	6
100 K41	Kentucky Agricultural Experiment Station, Bulletin	11
24 Ea72	Kenya Dept. of Agric. Bulletin	5



<u>CALL NUMBER</u>	<u>TITLE</u>	<u>NO. REQUESTED</u>
384 Z315	Kolloid Zeitschrift	5
448.8 L11	Laboratory Investigation	7
448.8 L22	Lancet	8
282.8 J82	Land Economics	9
105.8 L23	Landwirtschaftlichen Versucho Stationen	6
450 L642	Linnaea	5
514 Sy2	Linnean Society of New South Wales. Proceedings	13
410.9 L84P	London, England. Zoological Society, Proceedings	17
100 L93	Louisiana Agricultural Experiment Station, Annual Report, Circular, Bulletin	11
286.8 M33	Marchés Tropicaux du Monde	5
1.942 A8M34	Marketing Activities	5
100 M38H	Massachusetts Agricultural Experiment Station, Bulletin	6
442 R182Ma	Mathematical Principles of Biology	5
280.12 G71	Megalopolis	5
325 E23	Methods of Correlation	13
100 M58S	Michigan Agricultural Experiment Station, Bulletin	12
44.8 M595	Milk Dealer	5
44.8 C864	Milk Plant Monthly	8
100 M66	Minnesota Agricultural Experiment Station, Annual Report, Bulletin	9
513 T5722S	Miscellaneous Reports of Research Institute for Natural Resources	7
100 M69	Mississippi Agricultural Experiment Station, Annual Report, Bulletin	6
100 M69Mi	Mississippi Farm Research	5
100 M693	Missouri Agricultural Experiment Station, Research Bulletin	10
41.8 M74	Monatshefte fur Tierheilkunde	5
41.8 M742	Monatshefte für Veterinärmedizin	7
269.7 F49M	Monthly Return of the Foreign Trade of Japan	6
269.5 St2M	Monthly Statistics of the Foreign Trade	10
500 P533M	The Market Economy in the World of Today	6
450 M99	Mycologia	9
500 N21P	National Academy of Science, Proceedings	13
396 Am3	National Formulary	7
470 N213	National Geographic Magazine	28
80 N216	National Horticultural Magazine	6
513 N212	National Institute of Sciences of India, Proceedings	5
280.38 N21	National Livestock Producer	8
286.85 N21	National Provisioner	5
279.9 C7663	Natural Resources and Economic Growth	6
472 N21	Nature	58
474 N213	Naturwissenschaften	11
259 St2MnG	Netherlands, Marnstatistiek	9
464.9 N47	New South Wales Dept. of Agriculture, Plant Disease Leaflet. Sydney, Australia	5
500 N48T	New York Academy of Science, Transactions	7
420 N87J	New York Entomological Society Journal	5
286.8 N488	New York Times	14
23 N48J	New Zealand Journal of Agriculture	5
514 N48A	New Zealand Journal of Science and Technology	7
100 N81	North Carolina Agricultural Experiment Station, Bulletin	6
100 N813	North Dakota Agricultural Experiment Station, Bulletin	11
464.8 N84	Notiziario sulle malattie delle piante. Milan, Italy	6
389.9 N953	Nutrition Society, Proceedings	5
100 Oh3S	Ohio Agricultural Experiment Station, bulletin	10
410 Oh3	Ohio Journal of Science	5
100 Ok4	Oklahoma Agricultural Experiment Station, Bulletin	6
100 Or3	Oregon Agricultural Experiment Station, Bulletin	7
386 Or3	Organic Syntheses	6
80 P116	Pacific Coast Nurseryman	10
330.9 P194	Pacific Science Congress, Proceedings	6
475 P174	Pakistan Journal of Scientific and Industrial Research	7
475 P173	Pakistan Journal of Scientific Research	7

<u>CALL NUMBERS</u>	<u>TITLE</u>	<u>NO. REQUESTED</u>
280 G95	Papers on the Science of Administration	5
9.2 P213B	Pará, Brazil (City) Instituto agronomier de norte. Boletim tecnico.	6
280.8 P43	Personnel	5
449.8 Ex8	Pest Control	10
396.9 P49	Pharmaceutical Society of Japan, Journal	11
25 P542	Philippine Agriculturist	12
475 P53	Philippine Journal of Science	9
334.8 P565	Physica	8
334.8 P56	Physical Review	9
334.9 L84	Physical Society of London, Proceedings	6
450 P564	Physiologia Plantarum. Copenhagen, Demark	6
447.8 P563	Physiological Reviews	7
410 P56	Physiological Zoology	6
450 P566	Phytomorphology. Delhi, India	5
464.8 P56	Phytopathology	11
1.9 P69P	Plant Disease Reporter	13
450 P692	Plant Physiology	27
421 P692	Plant Protection Bulletin, Rome, Italy	5
450 P693	Planta; Archiv für wissenschaftliche Botanik. Berlin, Germany	9
80 P812	Popular Gardening	6
47.8 Am33P	Poultry Science	19
151.65 P96	Public Health Reports	6
275.29 In28	Purdue University, Agricultural Extension, Circular	6
280.8 Q2	Quarterly Journal of Economics	15
440.8 Q2	Quarterly Journal of Microscopical Science	12
281.9 Au73	Quarterly Review of Agricultural Economics	5
382 L84Q	Quarterly Reviews	8
23 Q37	Queensland Journal of Agricultural Science	
398.8 Q4	Quick Frozen Foods	11
334.8 R11	Radiation Research	6
421 R241	Redia giornale di Entomologia	6
241.7 R25	Referaty Zhurnal Biology	10
295.9 Am32J	Refrigeration Engineering	10
157.41 C3374B	Retail Trade	6
251.8 R32	Review of Economics and Statistics	7
249.09 Am3Am	Revolution in Training	7
450 R326	Revue Générale de Botanique. Paris, France	6
455.63 Ir9	Roadside Flowers of Texas	6
449.9 R66	Rome (City) Instituto Superiore di Sanita. Rendiconti.	6
340.9 R81	Royal Meteorology Society	5
501 L84B	Royal Society of London, England, Proceedings, Biological Sciences	9
501 L84A	Royal Society of London, England, Proceedings, Mathematical and Physical Sciences	7
251 R81JS	Royal Statistical Society, London Journal, Series B	6
470 Sci2	Science	42
475 Sci24	Science and Culture	6
470 Sci25	Scientific American	24
470 Sci23	Scientific Monthly	6
61 M362	Seed Identification Manual	7
45.8 Sh3	Sheep and Goat Raiser	6
500 Sm6M	Smithsonian Miscellaneous Collections	7
307.8 So12	Soap and Chemical Specialties	7
280.8 J823	Social Forces	7
420 It1	Societa Entomologica Italiana. Bollettino	6
383 So1	Societe de Chimie Biologique Bulletin	5
420 B41	Societe Entomologique de Belgique, Bulletin	10
420 F84	Societe Entomologique de France, Annals	8
306.9 So1	Society Dyers and Colourists, Journal	8
442.9 So15	Society for Experimental Biology (Great Britain) Symposia	5
442.9 So1	Society for experimental biology and medicine, proceedings	8

<u>CALL NUMBER</u>	<u>TITLE</u>	<u>NO. REQUESTED</u>
56.8 So38	Soil and Plant Food	5
411 K51	Soil Animals	5
56.8 So3	Soil Science	9
56.9 So3	Soil Science Society of America. Proceedings	10
511 Ak146	Soobschchennia Akad. Nauk. Gruz. SSR	5
23 So84	South Australia Dept. Agr. Journal	5
100 So8	South Carolina Agricultural Experiment Station, Bulletin	8
100 G29So	Southern Cooperative Series Bulletin	5
100 So82	South Dakota Agricultural Experiment Station, Bulletin	10
334.8 Sp3	Spectrochimica Acta	14
157.9 St2	Statistical Abstract of U.S.	8
269.5 P172S	Statistical Bulletin	6
284 C765	Studies in Income and Wealth	5
249.38 Su72	Supervisory Management	7
157.7 C76Ds	Survey of Current Business	15
249.08 Sy8	Systems and Procedures Journal	8
302.8 T162	TAPPI	14
100 T31S	Texas Agricultural Experiment Station, Bulletin	6
100 T31M	Texas Agricultural Experiment Station, Miscellaneous Publication	10
81 M583N	The Hemerco	7
81 M583N	The Hemerocallis Journal	7
173.2 Soil	The Labor Market	6
200.4 G42	The Language of Science	6
463.46 J18Ae	The Wonderful Life of Flowers	5
99.81 T484	Timberman	5
286.89 T552	Tobacco	5
451 T63B	Torrey Botanical Club, Bulletin	5
271.2 C33	Trade and Shipping	7
382 F22	Transactions of the Faraday Society	11
387 K83Tr	Treatise on Analytical Chemistry	7
26 T751	Tropical Agriculturist	5
1	U. S. Congress Agricultural Appropriation House Hearings	6
1 P69B	U. S. Bureau of Plant Industry, Bulletin	6
1 Ag84Ab	U. S. Dept. of Agriculture. Agriculture information bulletin	11
1 Ag84B	U. S. Dept. of Agriculture. Bulletin	11
1 Ag84C	U. S. Dept. of Agriculture. Circular (Ceased publication 1958)	17
1 Ag84F	U. S. Dept. of Agriculture. Farmers bulletin	19
1 Ag84J	U. S. Dept. of Agriculture. Journal of Agricultural Research	20
1 Ag84L	U. S. Dept. of Agriculture. Leaflet	5
448.8 V81	Virology	7
386.2 H243	Vitamins and Hormones	7
79.8 W41	Weeds	11
280.9 W527P	West Farm Economic Association, Proceedings	5
6 F2278	Western Livestock Journal	6
436.8 W63	Wiadomosci Parazytologiczne, Jr.	6
454 L54W	Wildflowers of North America	8
100 W75	Wisconsin Agricultural Experiment Station, Bulletin	9
464.8 Z1	Zastita Bilja	5
384 Z322	Zeitschrift Anorganische Und Allgemeine Chemie	8
384 Z3	Zeitschrift für Analytische Chemie	10
442.8 Z34	Zeitschrift für Induktive Abstammungsund Vererbungslehre	6
442.8 Z33	Zeitschrift für Morphologie und Ökologie der Tiere	5
474 Z3	Zeitschrift für Naturforschung	12
334.8 Z3	Zeitschrift für Physik	6
384 Z38	Zeitschrift für Physiologische Chemie	10
444.8 Z3	Zeitschrift für Vergleichende Physiologie Jr.	12
410 Z3	Zeitschrift für Wissenschaftliche	9
448.3 C33	Zentralblatt für bakteriologie, Parasitenkunde und infektions krankheiten	8
41.8 Z5	Zentralblatt für Veterinarmedizin	6



<u>CALL NUMBER</u>	<u>TITLE</u>	<u>NO. REQUESTED</u>
384 Z39	Zeitschrift für Lebensmittel	5
448.3 Z4	Zhurnal Mikrobiologii	5
410 Z792	Zoologické listy. q. Prague, Czechoslovakia	5
410 R92	Zoologicheskii Zhurnal, U. S. S. R.	12
410 Z751S	Zoologische Jahrbucher, an. Jena, Germany Abteilung für Systematik Ökologie und Geographie der Tiere	11

TOTAL TITLES - 466

TOTAL REQUESTS - 4,354

# COMPARISON OF INDEX MEDICUS TO BIBLIOGRAPHY OF AGRICULTURE

	<u>INDEX MEDICUS</u>	<u>BIBLIOGRAPHY OF AGRICULTURE</u>
Authority	National Library of Medicine Dept. of Health, Education & Welfare	National Agricultural Library Dept. of Agriculture
Coverage	Of the 220,000 items per year worthy of indexing, target level would be in the neighborhood of 165,000 articles. In 1960, 125,000 articles were indexed. In 1962, 150,000 articles to be indexed. In 1964, 180,000 articles to be indexed. Number of journals indexed: 1,700.*	[Includes] literature of agriculture and allied sciences received in NAL. Publications from any country indexed provided in one of languages of Western Europe or in Russian; or have summaries in one of these languages. Number of Citations: 1957 - 98,409 1958 - 99,470 1959 - 93,107 1960 - 96,849 1961 - 94,302  Excludes: Unsigned articles, those signed with initials or pseudonyms, editorials, most letters to editors, columns appearing regularly. Number of journals indexed: total no. not available
Format		
size	9 1/4" x 11 3/4"	8 1/4" x 10 3/4"
pages	413 pp. plus 8 (March 1962)	295 pp. (March 1962)
columns	3 per page	2 per page
type	Combination of Roman, bold and italic fonts, in upper and lower case, along with adequate vertical spacing between lines.	Electric typewriter-upper and lower case. Consecutive number of the citation added by Bates numbering machine.
Frequency of Publication	12 monthly issues Annual cumulation	Monthly December issue solely a subject and author index
Currency	Between receipt of publication and appearance in <u>Index</u> , *average is 10 weeks.	Depends on the priority category of journal being indexed. If <u>Circulation copy</u> , average time lapse between receipt of journal in Bibliography Division and appearance in Bibliography of Agriculture is 6 weeks. If <u>non. circ.</u> , 8 weeks. Note of policy: List. from U. S. and Canada received more than six months after publication (1 yr. for foreign publications) is generally not indexed. Exception: Any important scientific publications.
List of Journals Indexed (Published)	Complete list of journals indexed in January 1962 issue. Also in cumulation for 1960 (published in 1961). Occasional Supplements (in 1962, March).	None (Each issue contains list of New Periodicals and Serials in field of agriculture, indexed in USDA Bibliog. if falls within scope of Bibliog.)
List of Abbreviations for journals	Appears in January issue.	Refer to USDA Misc. Publ. no. 765. <u>List of Periodicals Currently Received in the USDA Library.</u> July 1, 1957.

Price	<u>INDEX MEDICUS</u> \$20.00 per year. Index priced separately \$35.00 per year. Foreign \$25.00 for monthly. \$40.00 for Index.	<u>BIBLIOGRAPHY OF AGRICULTURE</u> \$10.00 per year. Foreign: \$13.00
Arrangement	January issue: 1. Title Page 2. Advertisement for other publications  3. Preface 4. List of subheadings  5. List of journals indexed, by abbreviation 6. List of journals indexed, alphabetically by title. 7. Changes in medical subject headings 8. Subject index 9. Author index 10. Recent U.S. publications (Cat. cards reprinted) February-December issues: 1. T.P. 2. Advertisement for other publications 3. Suppl. to list of journals indexed (March) 4. Key to journal title abbreviations for selected Review articles (i.e. articles in journals not routinely indexed) 5. Subject Index 6. Author index 7. Recent U.S. publications	January issue: 1. Outline of policy 2. Description of format, statement of frequency, availability of references cited. 3. Contents - by broad subject classification 4. Citations arranged by author under these broad classifications (Each numbered consecutively) 5. New periodicals and serials  6. Translations 7. USDA Publications 8. State Agri. Expt. Sta. Publications 9. State Agr. Ext. Serv. Publications 10. FAO Publications 11. Author index February-November: same as above, omitting 1 and 2.  December issue: 1. T.P. 2. Contents 3. Cumulated author index, listed by citation number 4. Subject index, lists references by citation number
Indexes	Monthly issues have author index. All 12 issues cumulated into one alphabet, so that 12 monthly issues are superseded and can be discarded. 1960 has been published (in 1961). Number of subject headings: *5000. No cumulation of yearly indexes.	Monthly issues have author index. December issue has cumulative index and subject index to preceding 11 months - both give references by citation number.  Number of subject headings: No cumulation of yearly indexes.
Citations Compared	<u>HYPERTENSIN</u> <u>Pharmacology</u>  MELLEROWICS H, NOWACKI P: [Comparative studies on respiratory and circulatory function in physically equal ergometric work in standing, sitting and lying position]. Z Krebsforsch 50:1002-32, Oct. 61 (Ger)  TAQUINI AC Jr, BLACQUIER PC, BOHR DF: Neurogenic factors and angiotensin in etiology of hypertensin. Amer. J. Physiol 201:1173-5, Dec 61  <hr/> Bibliography of Agriculture (cont'd) Aberdeen-Angus by H.R. Neilson; Ayrshire, by J. Graham; Belted Galloway, by Lord D. Stuart . . . etc. through selections of book - using 12 lines. Furthermore, each of the names indexed here appears in author index. (Oct. 1961 p. 111)	<u>ANIMAL INDUSTRY - CATTLE</u> <u>Feeds and Feeding</u>  83000 KNIGA, M.I. Sugar beets in the rations of dairy cows (in Russian). Vest. Sel'skokhoz. Nauki, 1961(6): 42-49. Ref. June 1961. 20 V633 English summary includes effects on milk production.  83003 KRUKOVSKY, V.N. Quality of dairy products: vitamin A, carotenoid, iodine, and thiocyanogen values, and the refractive index of milk fat as influenced by feed, and by individual and breed differences. J. Agr. & Food Chem. 9(4):326-330. Ref. July 1961. 381 J8223  <u>Note completeness of this citation:</u> <u>ANIMAL INDUSTRY - CATTLE</u> <u>Breeds and Breeding</u>  82875 GT. BRIT. MINISTRY OF AGRICULTURE, FISHERIES AND FOOD. Cattle of Britain. Ed. 2. Gt. Brit. Min. Agr. Fisheries & Food. B 167, 46 p. 1961. 10 G794B

\* National Library of Medicine Index Mechanization project (Bul. Med. Lib. Assoc. Jan. 1961) p. 43, p. 82, p. 33.

SERIAL TRANSIT STUDY OF PIECES RECEIVED IN CATALOG AND RECORDS IN Nov. 1-30, 1962  
List of Statistical Tables and Charts

Publication Frequency

Table T 1 Publication Frequency

Currency of Material

Table T 2 Average Time Lag from Date of Publication to Date Received

Table T 3 Time Lag, by Weekd Through 52 Weeks, and by 4-Week Periodis Through 100 Weeks

Fig. T 4 Percentages of Pieces with Time Lag by Weeks

Volume Flow

Fig. T 5 Volume Flow

Daily Work Flow

Table T 6 Order of Processing in Current Serial Records

Table T 7 Received in Current Serial Records

Fig. T 8 Received in Current Serial Records

Table T 9 Received in Index and Documentation

Fig. T 10 Received in Index and Documentation

Table T 11 Received in Lending

Fig. T 12 Received in Lending

Lapse Time

Table T 13 Detail by Days or Weeks: Catalog and Records, Page 1 and 2  
Index and Documentation, Page 3 and 4  
From Catalog and Records to Lending, Page 5

Fig. T 14-16 Comparison of Mode, Median, and Mean, arranged as in Table 13

Table T 17 Lapse Days for Percentages not yet Processed: for 1, 10, 25, 50, and 75 percent, arranged as in Table 13

SERIAL TRANSIT STUDY OF PIECES RECEIVED IN CATALOG AND RECORDS (CSR) IN Nov. 1-30, 1962

A time study was made of the movement of serials from the time the issues were received at the Current Serial Records mail desk in the Division of Catalog and Records until they were received in Lending and subsequently made available to Borrowers. The material received in CSR from November 1-30, was used in the study.

The main purpose of the study was to find out how long after cataloged serials are received in the library are they available to the borrower. The survey provided other statistics such as publication frequency, currency of material received, and daily work Flow that are also important to planning for automated processing in CSR.

A prenumbered "serial transit slip" was attached to each piece received in CSR. If the serial was recorded, this slip was not removed until the piece was received in Lending, however long it might take. The date that the piece was received in CSR was stamped on the first line, the publication date entered on the second line, and subsequent dates were added to the slip at each of the 10 possible processing stations. The slip is reproduced below.

SERIAL TRANSIT SLIP NO. \_\_\_\_\_  
DATES

1. Received CSR \_\_\_\_\_
2. Publication Date \_\_\_\_\_
3. Recorded in CSR \_\_\_\_\_
4. Sent to Acq. \_\_\_\_\_
5. Received in Cat. \_\_\_\_\_
6. Received in Prep. \_\_\_\_\_
7. Received in I&D. \_\_\_\_\_
8. Indexed \_\_\_\_\_
9. Typed \_\_\_\_\_
10. Proofread \_\_\_\_\_
11. Received Lending \_\_\_\_\_
12. Received Reference \_\_\_\_\_

From this study the following statistics have been derived:

1. Publication frequency.



2. Currency of material - time lag from publication date to the date received in the library
3. Volume Flow - the number of pieces and the path taken through the various work stations, beginning with the pieces received in Current Serial Records and ending with the receipt of the piece in Lending, subsequently to be available to the Borrower
4. Daily work Flow - Record of issues received in Division of Catalog and Records, in the Division of Indexing and Documentation and in the Division of Lending as a measurement of daily flow; the order of processing in CSR.
5. Lapse time - Lapse-time at various work stations, or between stations. Work Stations are identified in Figure T 5.

#### 1. Frequency of Publication

Of the 11,202 publications that were received in the survey month and subsequently recorded (pieces discarded were excluded) there were 10,397 that were published in 1962, 445 published in 1961 and 248 published in 1958 to 1960. Pieces dated prior to 1958 are not considered current and were eliminated from the survey.

The issues published in 1962 consisted of 9 percent with a frequency of a year or more (year only shown on the publication), 50 percent with a frequency of a month or more, but less than a year (the month was shown as the date) and 41 percent that was less frequent than a month (day was shown on the publication). The detail by months in 1962 is shown in Table T 1.

#### 2. Currency of Material

The 4,274 pieces published in 1962 with a frequency less than monthly had an average lag of 24 days measured from the publication date to the day the issue was received from the mail room. The 5,210 monthly pieces had an average lag of 61 days and together the two groups averaged 44 days lag see Table T 2.

Table T 3 is a detailed analysis showing the pieces and the percents for each 7-day lag period for 52 periods, and thereafter for 4-week periods through 100 weeks. Fig. T 4 shows the percentages of the pieces with time lag by weeks. The lag rate declined in a steep linear fashion for the first 9 weeks; from 9 to 15 weeks the decline is moderate and at 15 weeks levels off to a slow decline. Only 10 percent of the pieces are included in those with a lag of from 27 weeks to 2 years.

The frequency series of the number of pieces with reference to the lag time has been cumulated in two different ways. These are shown in Fig. T 4 and in brief form in the table below. From the left scale with the number of pieces cumulated downward, may be determined readily the number of pieces (expressed as a percentage of the total) with a time lag no more than the given lag. Cumulating upward, the right hand scale interprets the number of pieces with a time lag of at least the given lag.

From the table below it can be seen that of the material recorded, 20 percent is received within at least 2 weeks from the publication date, 40 percent within at least 4 weeks, 60 percent within at least 7 weeks, 80 percent within at least 12 weeks, and 90 percent within at least 27 weeks.

<u>Pieces with Time Lag of No More Than The Given Weeks</u>	<u>Time Lag From Publication Date To Date Received in the Library</u>	<u>Pieces With Time Lag of At Least The Given Weeks</u>
<u>Percent of Total</u>	<u>Weeks</u>	<u>Percent of Total</u>
10	1-1/2	90
20	2	80
30	3	70
40	4	60
50	5-1/4	50
60	7	40
70	9	30
80	12-1/2	20
90	27	10
95	66	5

#### WORK FLOW GENERAL

There were 24,651 pieces received in Current Serial Records during the survey period from November 1-30, 1962.

When the survey started on November 1 there were 5,266 pieces that had been received prior to November 1 that had not yet been processed in CSR except for the initial sort. The initial sort in on the first letter of the alphabet, and the pieces are then transferred to shelves to await action by the checkers. These pieces that were in process on November 1 are not included in the survey except to be identified in the daily work Flow tables and charts for Indexing and Documentation (Table T 9 Figure T 10) and for Lending (Table T 11 Figure T 12). These statistics were derived from a count made of pieces received with slips which represent pieces received during the survey month of November 1962, and of pieces that did not have slips which represent material received either before or after the survey month. In the processing taking place in CSR there was no one point in which comparable counts could be taken for material received before or during the survey period, therefore Figure T 8 shows only daily receipts at the mail desk during the survey month.

Analysis based on publication date of pieces that were received in Current Serial Records Section during Nov. 1962 and subsequently recorded. 1/

Publication Frequency

Date Published	Number of Pieces by Publication Frequency			
	Total	Month or More		
		Less than a Month (Day shown on Pub)	but Less Than Year (Month shown on Pub)	Year or More (Year only shown on pub)
	Pieces	Pieces	Pieces	Pieces
<u>2/</u> 1958-1960	248	3	99	146
1961	445	74	168	203
1962 or later	900 (year only)			900 (year only)
Jan.	33	12	21	
Feb.	50	17	33	
Mar.	67	15	52	
Apr.	59	19	40	
May	111	22	89	
June	195	27	168	
July	211	22	189	
Aug.	396	59	337	
Sept.	1,238	260	978	
Oct.	3,139	1,488	1,651	
Nov.	3,627	2,139	1,488	
Postdated: Nov. <u>3/</u>	177	177	-	
Dec.	179	17	162	
Postdated 1963	15	-	2	13
Total 1962 or later	10,397	4,274	5,210	913
	100 o/o	51.1 o/o	50.1 o/o	8.8 o/o
GRAND TOTAL	11,090	4,351	5,477	1,262
	100 o/o	39.2 o/o	49.4 o/o	11.4 o/o

1/ Pieces that were discarded have been excluded

2/ Records for material published prior to 1958 had been moved to the historic file and are not included in this survey of current serial records

3/ Date received earlier than date published

Currency of Material Received and Recorded in Current Serial Records

TABLE T2

Year Published	Average Lag from Date of Publication to Date of Receipt			
	Pieces Recorded	A V E R A G E L A G		
		Days	Weeks	Years
1958 - 60				
1958	54			
1959	78			
1960	<u>116</u>			
Total	248			2.0
1961				
Less than monthly <u>1/</u>	74		61	
Monthly <u>2/</u>	168		65	
Annual <u>3/</u>	<u>203</u>		<u>70</u>	
Total	445		67	
1962				
Less than monthly <u>1/</u>	4,274	23.6	Publication Frequency:	
Monthly <u>2/</u>	<u>5,210</u>	<u>61.0</u>	<u>1/</u> Less than a month (day shown on pub)	
Total	9,424	44.2	<u>2/</u> Month or more but less than a year (month shown)	
Annual <u>3/</u>	913		<u>3/</u> Year or more (year only shown)	
			July 1 assumed as pub date for 1961 annuals but no assumption made for 1962 and time lag omitted 1962.	

Currency of Material Received in Current Serial Records of  
the Catalog and Records Division in Period November 1-30 1962

Time Lag from Date of Publication to Date Received

Table T 3

Time Lag		Pieces Received and Recorded Publication Frequency				Percent of Total Pieces	
		Year 3/	Month 2/	Less than month 1/	Total	Each Week	Cumulated
		Pieces	Pieces	Pieces	Pieces	Percent	Percent
1963		13	2	—	15		
Dec. 1962		—	162	17	179		
Nov. 1962		—	—	177	177		
Subtotal					371	3.31	100.00
Days	Weeks						
1-7	1	<u>4/</u> 179	315	1514	2008	17.93	96.69
8-14	2	74	286	468	828	7.39	78.76
15-21	3	104	318	747	1169	10.44	71.37
22-28	4	85	418	452	955	8.52	60.93
29-35	5	79	519	289	887	7.92	52.41
36-42	6	48	321	171	540	4.82	44.49
43-49	7	50	404	108	562	5.02	39.67
50-56	8	41	369	49	459	4.10	34.65
57-63	9	39	343	48	430	3.84	30.55
64-70	10	30	276	30	336	3.00	26.71
71-77	11	25	225	28	278	2.48	23.71
78-84	12	17	152	20	189	1.69	21.23
85-91	13	18	171	12	201	1.79	19.54
92-98	14	11	105	7	123	1.10	17.75
99-105	15	9	80	10	99	.88	16.65
106-112	16	8	73	5	86	.77	15.77
113-119	17	4	39	5	48	.43	15.00
120-126	18	8	76	5	89	.79	14.57
127-133	19	5	44	7	56	.50	13.78
134-140	20	5	39	6	50	.45	13.28
141-147	21	3	24	7	34	.30	12.83
148-154	22	6	54	2	62	.55	12.53
155-161	23	6	59	3	68	.61	11.98
162-168	24	5	42	6	53	.47	11.37
169-175	25	3	27	3	33	.29	10.90
176-182	26	4	27	9	40	.36	10.61
183-189	27	3	25	3	31	.28	10.25
190-196	28	1	7	8	16	.14	9.97
197-203	29	2	16	6	24	.21	9.83
204-210	30	4	35	3	42	.37	9.62
211-217	31	2	18	3	23	.20	9.25
218-224	32	2	15	5	22	.20	9.05
225-231	33	1	9	4	14	.12	8.85
232-238	34	1	6	3	10	.10	8.73
239-245	35	—	3	2	5	.04	8.63



## Time Lag from Date of Publication to Date Received

Time Lag		Pieces Received and Recorded Publication Frequency				Percent of Total Pieces	
		Year 3/ Pieces	Month 2/ Pieces	Less than month 1/ Pieces	Total Pieces	Each Week Percent	Cumulated Percent
Days	Weeks						
246-252	36	2	15	4	21	.19	8.59
253-259	37	1	13	2	16	.14	8.26
260-266	38	1	8	7	16	.14	8.26
267-273	39	2	15	2	19	.17	8.12
274-280	40	2	13	3	18	.16	7.95
281-287	41	1	6	4	11	.10	7.79
288-294	42	1	5	5	11	.10	7.69
295-301	43	1	6	4	11	.10	7.59
302-308	44	1	9	3	13	.12	7.49
309-315	45	-	4	-	4	.03	7.37
316-322	46	1	7	2	10	.10	7.34
323-329	47	-	2	1	3	.03	7.24
330-336	48	3	32	2	37	.33	7.21
337-343	49	-	-	2	2	.02	6.88
344-350	50	-	-	-	-	-	6.86
351-357	51	-	-	2	2	.02	6.86
358-364	52	2	2	1	24	.21	6.84
53-56		5/ 11	-	10	21	.19	6.63
57-60		42	28	9	79	.70	6.44
61-64		30	19	8	57	.51	5.74
65-68		16	6	8	30	.27	5.23
69-72		25	12	10	47	.42	4.96
73-76		24	15	6	45	.40	4.54
77-80		17	8	7	32	.29	4.14
81-84		12	8	3	23	.20	3.85
85-88		10	9	-	19	.17	3.65
89-92		-	-	-	-	-	3.48
93-96		15	13	-	28	.25	3.48
97-100		1	-	1	2	.02	3.23
2 years or more		170	181	9	360	3.21	3.21
Total		1,286	5,559	4,357	11,202	100.00	

## Publication Frequency:

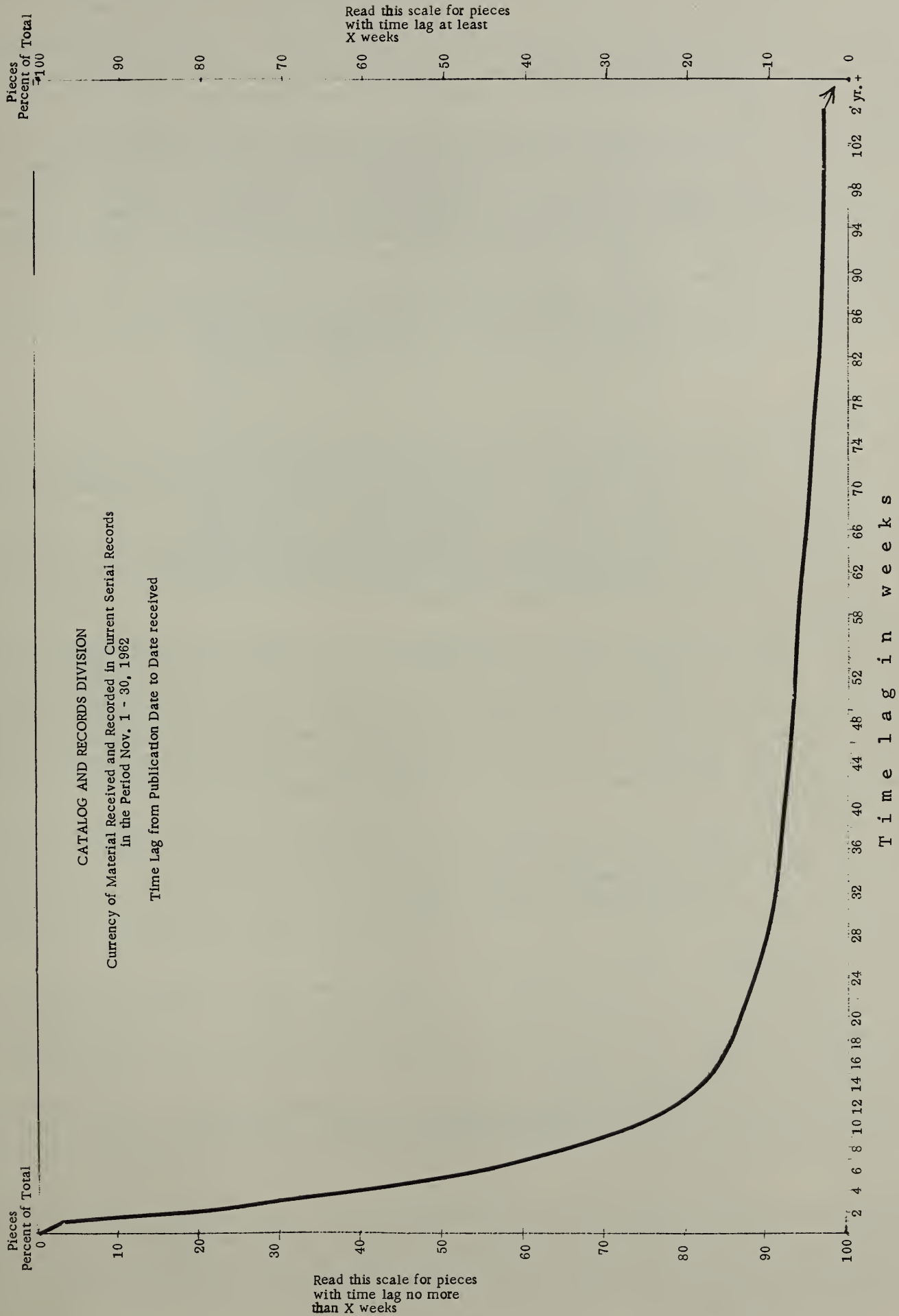
1/ Less than a month (Day shown on pub)

2/ Month or more but less than a year (Month shown on pub)

3/ Year or more (Year only shown on pub)

4/ Time lag could not be computed for pieces which did not show month of publication. There were 900 pieces dated 1962 which were prorated according to lag shown for other 1962 pieces.

5/ There were 203 pieces dated 1961 which were prorated according to lag shown for other 1961 pieces.



### 3. Volume Flow

Figure T 5 shows volume Flow of pieces received in the survey period starting with the receipt in CSR described as Station 1 and identifies the volume and processing path taken by the pieces as they traveled through the various work stations.

The greatest volume of pieces went through Station 3 Recorded in CSR, through Station 7 Received in Indexing and Documentation, and ended at Station 11 Received in Lending subsequently to becoming available to the Borrower. About 2/3 of the pieces that went through Station 7 were not acted upon (indexed for the Bibliography) and in general took one to two days to get to Lending.

A smaller volume, requiring more detailed action in Catalog and Records, took various paths of great variety between 3 and 7 and consumed the most time.

Thirty-nine percent of the pieces received in CSR during the survey month went no farther in the NAL System, but were discarded to the U.S. Book Exchange. This percentage was as high as 50 percent according to the annual 1961-62 statistics. A large volume of the unwanted publications are received as a result of such conditions as the following, over which the Library has no control: publications discarded from Department offices, out of date mailing lists, promotional copies of serials. However, the checker had to search each title in his checking file before it was determined that the piece was not to be kept in this library. It is noted that many of the discards are multiple copies of publications received at one time, so that the number of pieces received does not reflect the number of titles searched.

There were 11, 533 (or 47 o/o of the pieces received) that were recorded in the CSR checking file; 2, 261 (9 o/o) titles were searched, and not found and sent to Acquisitions for selection; and 734 (3o/o) were removed because they did not fit the purpose of the survey which was to measure the time required to make periodicals available to the public.

### 4. Daily Work Flow

#### Order of Processing in CSR

Table T 6 shows the date the pieces were recorded for each day's receipts during November 1962. It should be noted that the total number of pieces recorded for a particular day as shown in the table relates only to the 11, 527 pieces received in November (invalid dates omitted in the count). At the beginning of the month there were 5,266 pieces received before November 1 that were also to be processed during November. (The count of 5,266 includes an undetermined number that would be searched and discarded rather than recorded. Based on other statistics, probably half of these would be recorded).

Of the 6,191 pieces received the first half of November, only 442 or 7 percent had not been recorded at the end of November. However, this represents almost a month's delay for the 128 pieces received November 1-5. A significant question is "How many pieces that are unduly delayed before recording are dailies or weeklies ?

#### Daily Work Flow in CSR

Table T 7 shows the number of pieces received in CSR (including pieces later discarded from the NAL System), the date received and the date sorted. An average of 1200 pieces per working day were received in November 1962. This ranged from a low of 297 to a high of 2,378. Receipts were from 600-900 pieces per day about 40 percent of the time (8 days) and over 1500 about 35 percent of the time (7 days). There were two holidays in November and 3 of the peak loads followed the holidays. No significant load pattern for certain days of the week is shown for November. However heavy days' receipts required as much as 3 days for the "first sort" of one day's receipts and staff were borrowed from the activity of the finer sort, searching and recording.

A question raised "is when staff is borrowed from search and recording are dailies and weeklies given priority by staff who continue to search and record ?"

Table T 9 and Figure T 10 show the number of pieces received daily in Indexing and Documentation for a 2 month period. The solid black line on the chart identifies pieces that were received in CSR during the survey month. The broken line represents pieces received either before or after the survey month. Only about 1/4 of this volume that goes through I&D is indexed for the Bibliography of Agriculture. If pieces not stopping at I&D were identified when recorded in CSR and sent directly to Lending a more efficient operation would be possible. A delay of one or two days could be avoided and for weeklies this is significant. As the chart shows the work flow is fairly even, ranging from 213 to 764 with the exception of one peak day with 1115 pieces. About half of the time there were 400 pieces received each day.

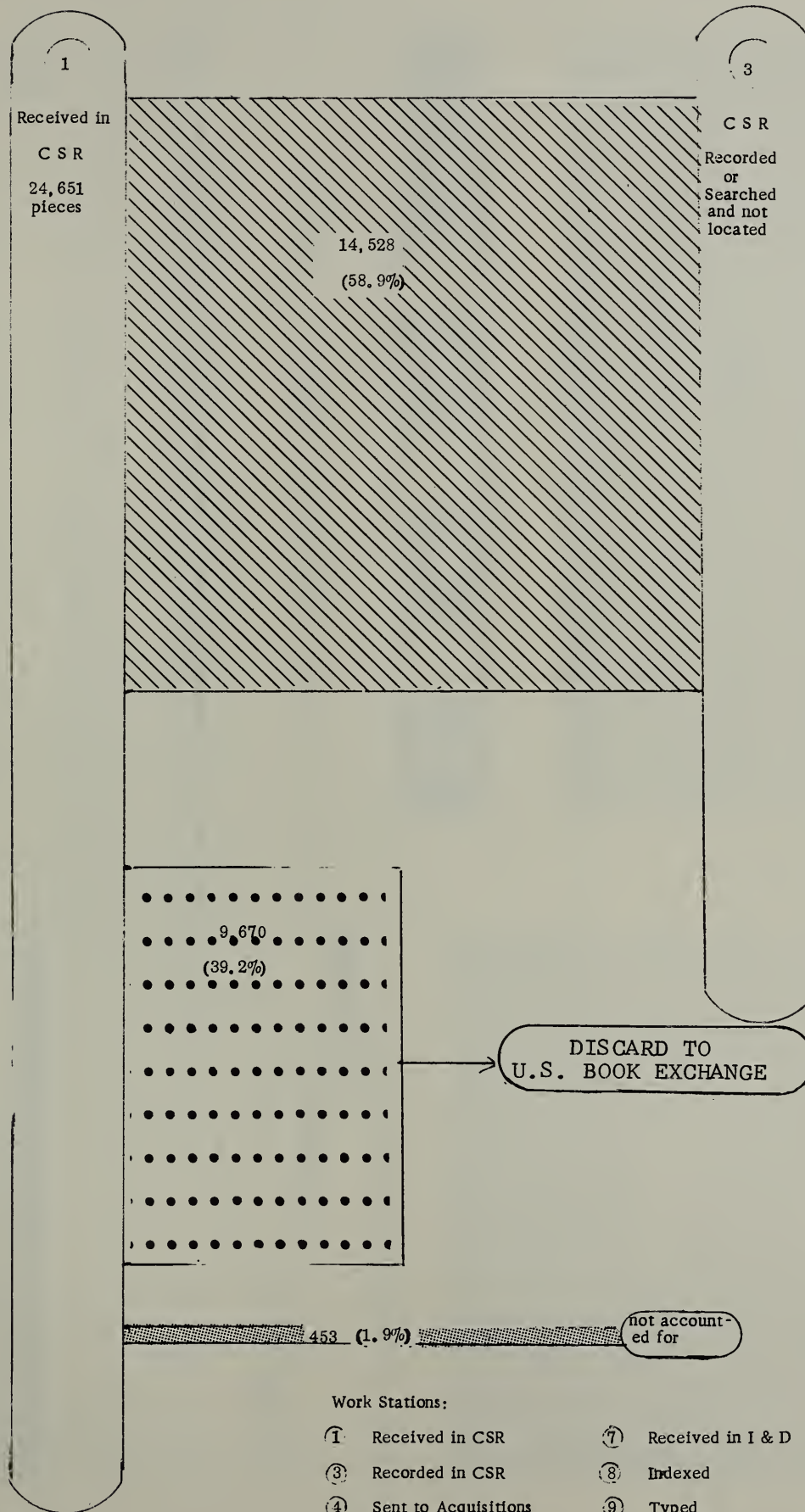
Table T 11 and Figure T 12 show the number received daily in Lending. These include the material coming directly to Lending from CSR, but most of the pieces traveled through I&D -- see Volume Flow Figure T 5. The count in Lending identified pieces with the property stamp date after the survey month of November. Therefore, in Figure T 12, the black solid line identifies material received in CSR November 1-30, and the broken line below the arrow identifies pieces received before November, while above the arrow shows pieces received after November.

The daily flow is similar to that in I&D with half the days in November showing 400 pieces received. A frequency distribution of number of days showing receipts in 100 piece intervals is shown on the next page. For both I&D and Lending, November shows a normal distribution peaking at 400-499 pieces. However, December shows as many days with 200-299 pieces as for 600-699.

### 5. Lapse Time

The lapse time was measured between various work Stations for pieces received in CSR during the survey month. In Table T 13 is shown the number of pieces with lapse time measured between various stations: for each working day from 0 (same day as received) to 20 days; in 5-day periods (one week) for the next 5 to 8 weeks; and in 10-day periods (two weeks) for the next 10 to 32 weeks. The number of pieces that had a lapse time of more than 160 working days is shown in one total. However, work sheets are available that show pieces for each 1-day period.





VOLUME FLOW

FOR PIECES RECEIVED IN CSR NOV. 1 - 30, 1962

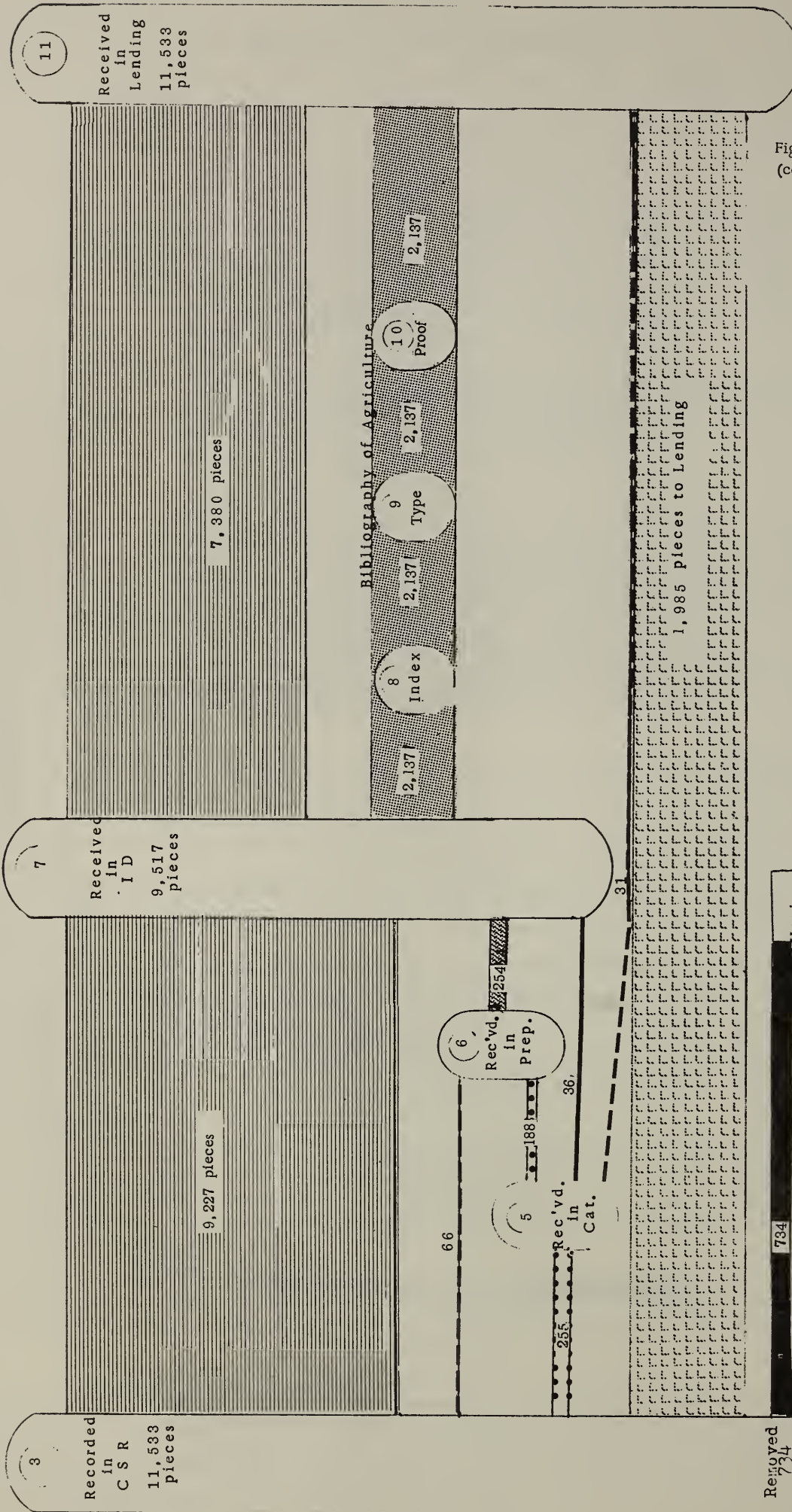


Fig. T 5  
(cont)

## ORDER OF PROCESSING IN CURRENT SERIAL RECORDS

Table T 6

## Pieces Received in Nov. 1962 and Recorded

(3) Date Pieces Recorded in CSR			(1) Date Pieces Received in CSR - November 1962									
			1	2	5	6	7	8	9	13	14	15
Nov.	1	.....	7									
	2	.....	19	10								
	5	.....	14	38	-							
	6	.....	42	151	19	60						
	7	.....	36	92	74	45	4					
	8	.....	35	94	55	31	66	1				
	9	.....	32	71	100	34	38	57	12			
	13	.....	22	103	71	53	104	5	35	8		
	14	.....	32	122	81	60	162	11	39	74	4	
	15	.....	33	92	68	14	87	12	41	77	61	-
	16	.....	25	94	55	36	110	6	33	76	111	2
	19	.....	28	46	64	21	92	1	25	38	123	43
	20	.....	8	32	8	14	45	7	33	65	181	40
	21	.....	10	20	21	16	75	8	22	61	130	48
	23	.....	10	14	9	10	24	1	25	41	92	64
	26	.....	1	7	1	3	7	1	14	26	75	24
	27	.....	8	14	14	8	29	8	13	33	66	47
	28	.....	3	11	10	10	37	1	24	23	116	29
	29	.....	7	4	5	2	13	5	12	13	54	21
	30	.....	5	1	3	2	8	-	3	13	25	18
Dec.	3	.....	-	3	3	-	-	-	1	3	17	15
	4	.....	-	9	6	1	-	-	-	4	13	23
	5	.....	-	4	1	1	1	-	1	4	28	10
	6	.....	1	4	-	-	1	3	6	5	8	9
	7	.....	-	1	3	-	3	2	-	1	6	2
	10	.....	5	3	10	2	3	7	4	-	4	4
	11	.....	1	4	3	-	1	-	1	6	4	4
	12	.....	-	2	-	-	-	-	-	-	1	-
	13	.....	1	3	1	-	1	-	-	1	9	6
	14	.....	-	2	-	1	1	-	1	4	-	-
Dec.	17 - 31	.....	-	18	17	1	25	-	-	2	5	22
Jan.	2 - 30	.....	1	11	7	2	9	-	-	3	4	4
Feb.	4 - May 16	..	-	3	1	-	1	-	-	2	1	1
Total	.....		386	1083	710	427	947	136	345	583	1138	436
Pieces not yet Recorded at the end of Nov.....			9	67	52	8	46	12	14	35	100	100
Number Percent of total			0.3	1.9	1.5	0.2	1.3	0.3	0.4	1.0	2.9	2.9



## ORDER OF PROCESSING IN CURRENT SERIAL RECORDS (Cont.)

Pieces Received in Nov. 1962 and Recorded Table T 6 (cont)

(3) Date Pieces Recorded in CSR			(1) Date Pieces Received in CSR - November 1962										Total 1/
			16	19	20	21	23	26	27	28	29	30	
Nov.	1	....											7
	2	....											29
	5	....											52
	6	....											272
	7	....											251
	8	....											282
	9	....											344
	13	....											401
	14	....											585
	15	....											485
	16	....	-										548
	19	....	120	1									602
	20	....	12	8	2								455
	21	....	22	30	37	2							502
	23	....	23	20	63	7	7						410
	26	....	12	22	44	57	127	10					431
	27	....	20	36	65	27	24	26	-				438
	28	....	26	42	113	38	44	172	2	6			707
	29	....	7	16	82	39	39	132	29	65	28		573
	30	....	27	28	60	42	14	104	5	27	31	18	434
Dec.	3	....	8	41	81	40	42	122	13	46	29	58	522
	4	....	14	30	89	41	59	221	32	80	99	73	794
	5	....	13	13	44	27	41	179	24	96	145	87	719
	6	....	13	9	22	17	23	106	13	41	107	68	461
	7	....	1	1	24	9	9	38	1	20	20	9	150
	10	....	3	13	13	9	9	26	14	23	48	20	220
	11	....	-	-	12	3	8	13	-	11	25	5	101
	12	....	2	-	20	33	4	16	1	3	10	10	100
	13	....	-	-	6	16	1	7	2	8	17	16	95
	14	....	-	-	3	-	4	3	-	5	-	7	31
Dec.	17-31	...	10	2	6	7	4	3	1	2	26	1	152
Jan.	2-30	....	1	2	6	2	7	10	-	2	9	2	82
Feb.	4-May	16	3	-	4	-	2	-	-	1	-	-	19
Total .....			335	314	796	416	468	1188	142	436	594	374	11,254
Pieces not yet													
Recorded at the													
end of Nov..													
			66	111	330	204	213	744	106	338	535	356	3446
Number													
Percent of total													
			19	3.2	9.6	5.9	6.2	21.7	3.1	9.8	15.6	10.3	100

<sup>1/</sup> This is not the total number recorded daily in CSR as pieces waiting to be recorded on Nov. 1 are not included.

DAILY WORK FLOW  
IN  
CURRENT SERIAL RECORDS

Table T 7

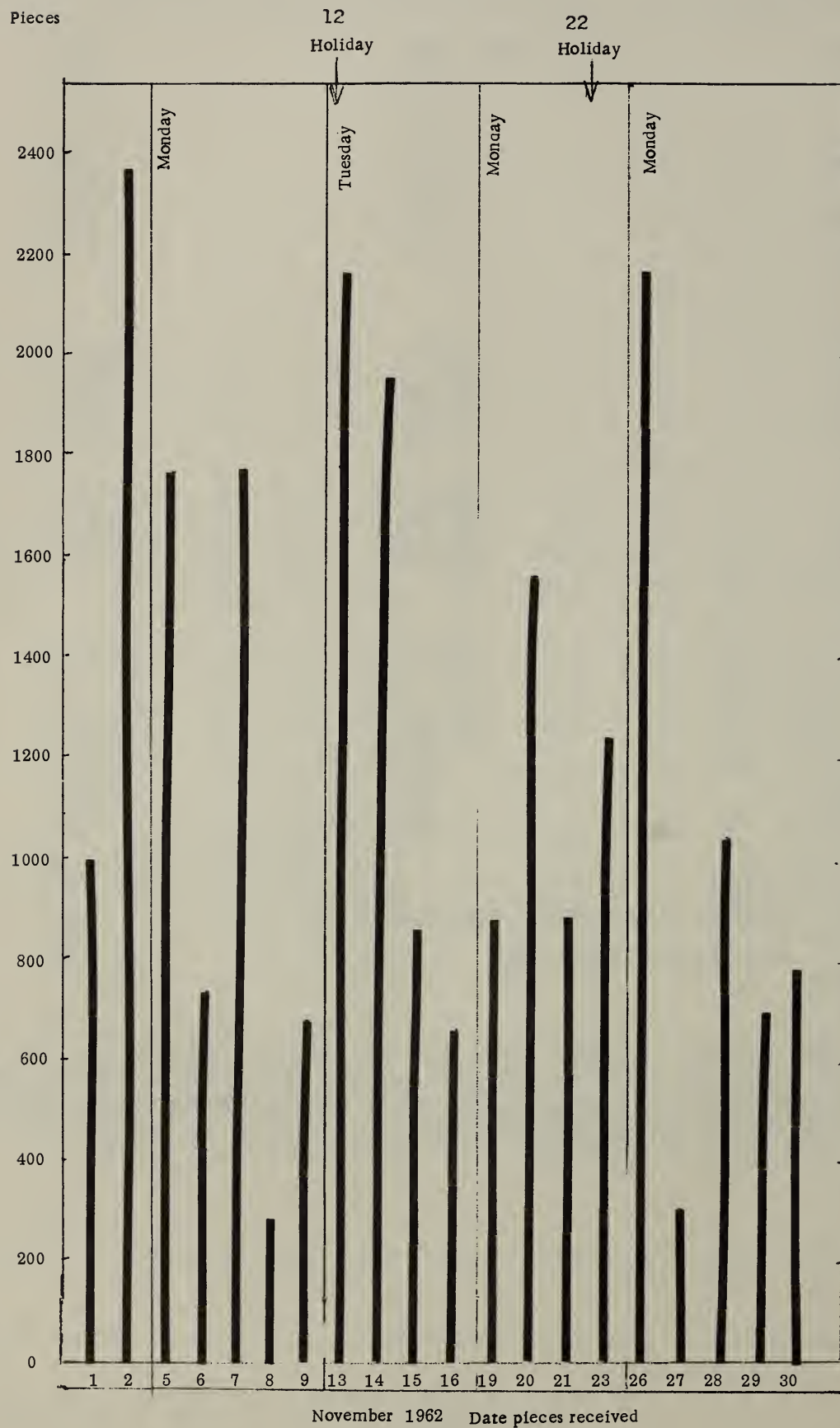
Pieces Received Nov. 1-30, 1962

Total Received in CSR 1/

Date Received		Date Sorted	Number Received
Nov. 1	Thurs.	Nov. 1-2	999
2	Fri.	2-5	2378
5	Mon.	5-6	1756
6	Tues.	6	728
7	Wed.	7-8	1769
8	Thurs.	8	286
9	Fri.	9	675
12	-H-		
13	Tues.	13-14	2159
14	Wed.	14-16	1939
15	Thurs.	16-19	856
16	Fri.	19	664
19	Mon.	19-20	880
20	Tues.	20-21	1574
21	Wed.	21-23	888
22	-H-		
23	Fri.	23-26	1253
26	Mon.	26-28	2181
27	Tues.	28	297
28	Wed.	28	1041
29	Thurs.	29	684
30	Fri.	30 - Dec. 3	786
Total .....			24,793
Number Assigned in error .....			142
Net Total Received .....			24,651

1/ This count taken when initial sort on the first letter of the alphabet was made. There were 39 percent of the pieces discarded later, including multiple copies not kept or required copies had already been received, or instructions from Division of Acquisitions were not to keep this title.

Pieces Received Daily in CSR, November 1-30, 1962





## DAILY WORK FLOW IN INDEXING AND DOCUMENTATION Table T 9

Pieces Received from CSR 1/ and Pieces Forwarded to Lending  
in Period Nov. 1 - Dec. 30, 1962

1962	Total	Pieces Received from CSR 2/				
		Total With Slips	Serials		Books 3/	
			With Slips	Without Slips	With Slips	Without Slips
On hand awaiting indexing on Nov. 1	4670					
Nov. 1	42					42
2	478	4	4	422		52
5	232	18	18	178		36
6	289	66	66	223		0
7	717	226	224	337	2	154
8	629	150	150	479	-	0
9	646	341	333	270	8	35
13	473	246	246	204	-	23
14	485	311	310	120	1	54
15	612	485	483	70	2	57
16	426	313	309	45	4	68
19	551	526	526	25	-	0
20	507	422	410	31	12	54
21	460	382	369	7	13	71
23	482	444	409	34	35	4
26	440	321	310	42	11	77
27	356	331	331	25	-	0
28	527	366	355	72	11	89
29	622	602	552	9	50	11
30	501	483	458	13	25	5
Dec. 3	479	400	374	16	26	63
4	555	514	511	34	3	7
5	1209	1054	1008	88	46	67
6	973	738	737	187	1	48
7	480	452	452	28	-	0
10	283	122	113	98	9	63
11	428	123	123	250	-	55
12	482	147	118	325	29	10
13	545	105	105	440	-	0
14	528	129	113	279	16	120
17	767	43	32	534	11	190
18	282	4	4	278	-	0
19	314	11	4	238	7	65
20	270	19	10	224	9	27
21	181	2	2	179	-	0
26	82	20	18	42	2	20
27	236	3	1	175	2	58
28	164	3	2	150	1	11
31	-	-	-	-	-	-

1/ About 3/4 of the pieces received are forwarded directly to Lending, and 1/4 are indexed for the Bibliography of Agriculture.

2/ Slips were attached to pieces received in Current Serial Records during the survey period Nov. 1-30, 1962.

3/ Separately cataloged volumes; slips were assigned in error to some pieces.

DAILY WORK FLOW IN INDEXING AND DOCUMENTATION (Cont.)  
Table T 9 (cont)

Pieces Received from CSR 1/ and Pieces Forwarded to Lending  
in Period Nov. 1 - Dec. 30, 1962

1962		Pieces Forwarded to Lending 2/				
		Total	Serials		Books	
			With Slips	Without Slips	With Slips	Without Slips
Nov.	1 .....	-				-
	2 .....	2				2
	5 .....	359	3	400		56
	6 .....	194	17	177		0
	7 .....	275	43	228		4
	8 .....	502	141	272		88
	9 .....	458	109	348		1
	13 .....	553	315	215		23
	14 .....	362	176	166		20
	15 .....	358	233	86	1	38
	16 .....	426	329	57	1	39
	19 .....	331	257	44		30
	20 .....	414	397	17		0
	21 .....	486	349	98		39
	23 .....	333	235	43	3	52
	26 .....	268	268	0		0
	27 .....	353	209	62	9	73
	28 .....	369	257	107	2	3
	29 .....	647	298	259	5	85
	30 .....	598	443	153	-	2
Dec.	3 .....	619	365	254		0
	4 .....	570	289	239	7	35
	5 .....	458	196	260	1	1
	6 .....	1080	886	164	13	17
	7 .....	607	411	180	2	14
	10 .....	599	432	146	1	20
	11 .....	405	145	210	2	48
	12 .....	499	116	327	2	54
	13 .....	442	150	275	9	8
	14 .....	579	145	430	0	4
	17 .....	322	65	217	2	38
	18 .....	476	40	372	0	64
	19 .....	441	27	410	0	4
	20 .....	405	24	340	3	38
	21 .....	302	31	222	5	44
	26 .....	236	39	177	2	18
	27 .....	201	40	145	0	16
	28 .....	275	47	216	1	11
	31 .....	304	29	242	1	32

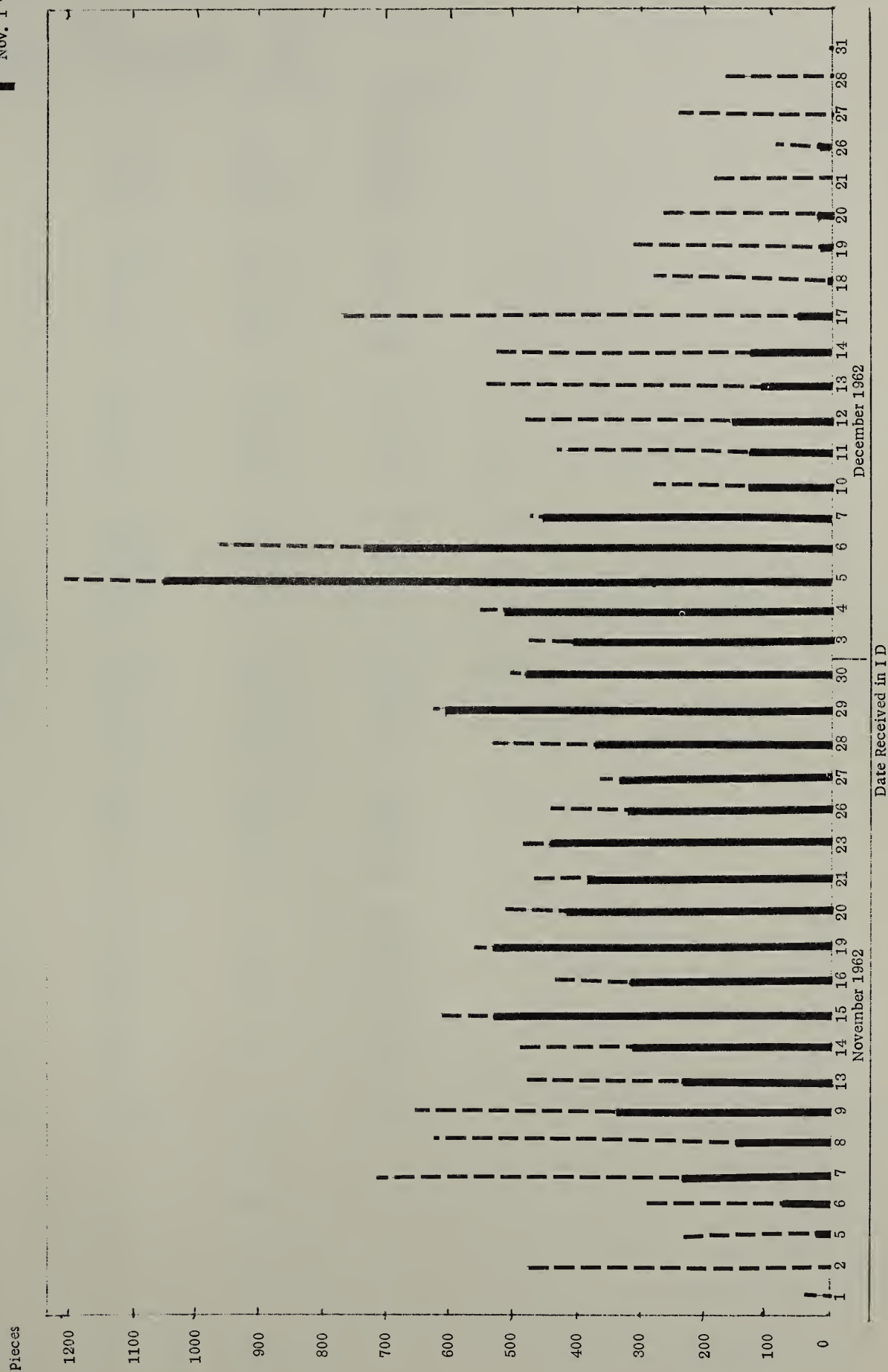
1/ About 3/4 of the pieces received are forwarded directly to Lending, and 1/4 are indexed for the Bibliography of Agriculture.

2/ Slips were attached to pieces received in Current Serial Records during the survey period Nov. 1-30, 1962.

- Pieces Received in CSR  
 other than Nov. 1962  
 - Pieces Received in CSR  
 Nov. 1 - 30, 1962

Fig. T 10

WORK FLOW IN INDEX AND DOCUMENTATION (I D )  
 Pieces Received Daily in I D (forwarded from CSR)





## DAILY WORK FLOW IN DIVISION OF LENDING

Table T 11

Pieces Received in Lending from CSR Direct or Through I D

Date Received in Lending		Date Received in CSR			
		Total	Nov. 1962	Other	
				Before Nov.	Dec.
		Pieces	Pieces	Pieces	Pieces
Nov.	5	323	6	317	
	6	218	16	202	
	7	469	123	346	
	8	564	209	355	
	9	455	109	346	
	13	584	296	288	
	14	403	225	178	
	15	421	325	96	
	16	435	369	66	
	19	395	353	42	
	20	517	491	26	
	21	460	365	95	
	23	414	343	71	
	26	447	387	60	
	27	376	303	73	
	28	473	331	142	
	29	688	426	262	
	30	757	551	206	
Dec.	3	678	417	261	-
	4	764	404	338	22
	5	743	480	231	32
	6	1115	940	111	14
	7	672	431	41	200
	10	308	109	106	93
	11	636	356	135	145
	12	743	323	140	280
	13	580	188	62	330
	14	698	171	171	356
	17	447	68	4	375
	18	582	46	92	444
	19	428	15	136	277
	20	460	41	89	330
	21	295	34	38	223
	26	274	40	68	166
	27	234	61	38	135
	28	279	30	58	191
	31	264	-	69	195
Total Nov. - Dec. ....		18,599	9382	5359	3858
Jan. 1 - 31 .....			573		
Feb. 1 - 11 .....			139		
Thru Feb. 11 .....			10,094		
Total Transit Slips .....			11,533		
Difference - not included in above tabulation .....			1439		

- Pieces Received in CSR  
 other than Nov. 1962  
 - Pieces Received in CSR  
 Nov. 1 - 30, 1962  
 - Pieces received in Dec.  
 shown above the

Fig. T 12

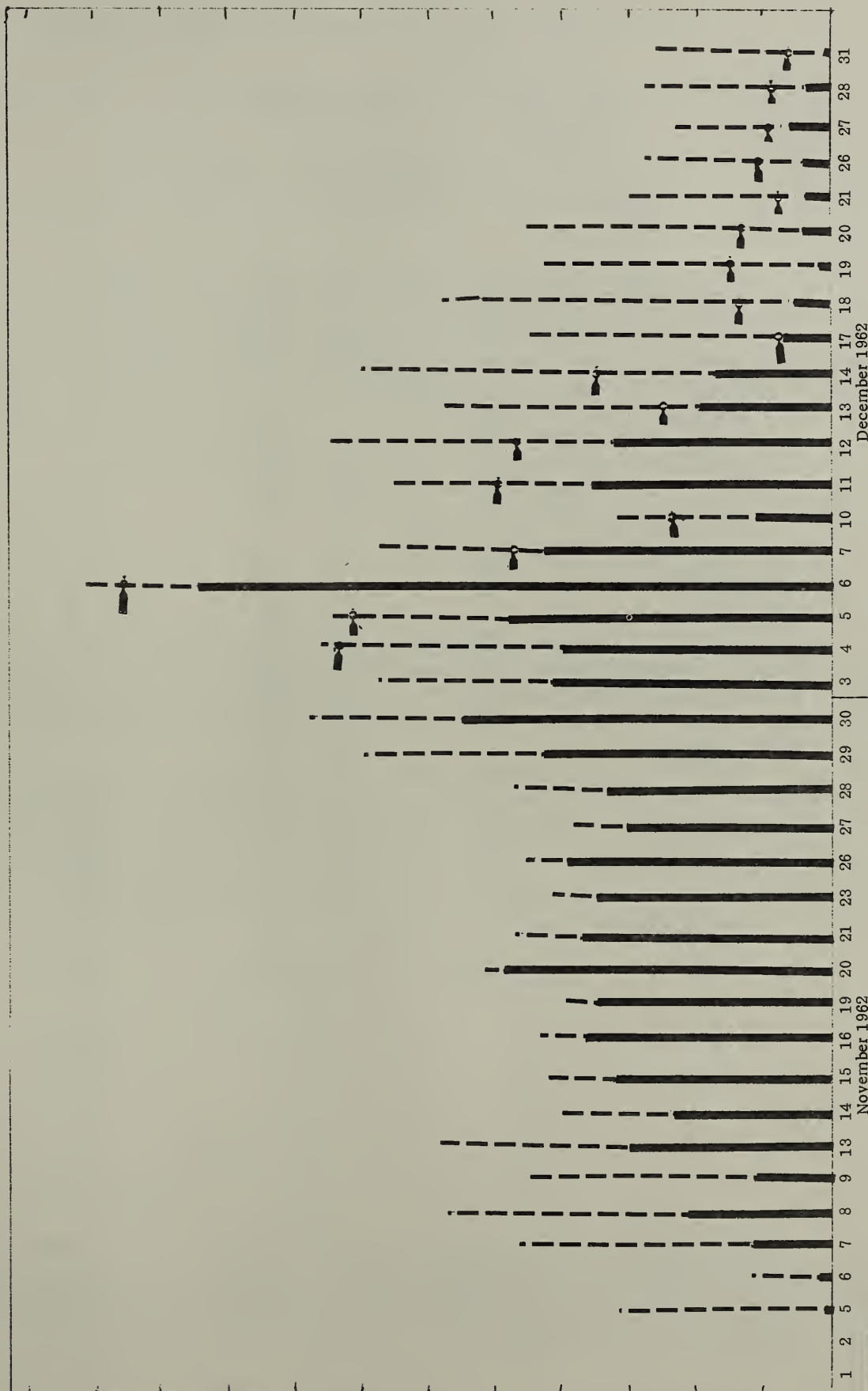
WORK FLOW IN LENDING

Pieces Received Daily in Lending Through I D or Direct from CSR

November-December 1962

Pieces

1200  
1100  
1000  
900  
800  
700  
600  
500  
400  
300  
200  
100  
0



Date Received in Lending

Pieces Received Per Day	Number of Work Days			
	Nov. 5-30, 1962		Dec. 3-31, 1962	
	Received in I&D	Received in Lending	Received in I&D	Received in Lending
1-99	-	-	-	-
100-199	-	-	-	-
200-299	1	1	4	5
300-399	3	3	2	1
400-499	9	10	3	3
500-599	3	3	1	2
600-699	1	1	5	4
700-799	1	1	3	3
1100-1199	-	-	1	1
Total Days	18	18	19	19

Most significant of these Statistics are the percent of the pieces that have not yet been processed. Table T 13 identifies varying "percentage not yet processed" levels and Table T 17 summarizes this by showing lapse days for 1, 10, 25, 50, and 75 percent not yet processed. Table T 17 also shows the mode, median, and mean averages as well as the highest lapse days recorded. Figure 14, 15, and 16 show graphically the 3 averages, and record the range and the number of pieces that were in the measurement.

The mode is the unit (lapse time) occurring the greatest number of times in an array; the median is the unit at the midpoint of an array; the arithmetic mean is the sum of the quantities divided by their number. The median and mode are a more significant measure of central tendencies than the arithmetic mean which is influenced greatly by the tag end pieces that took as long as 130 days although less than 1 percent remained to be processed after 30 days had lapsed.

The following are shown for time in or between stations in Catalog and Records:

- A. Time in CSR before piece recorded 1 - 3
- B. Time in Catalog and Records after piece recorded 3 - 7
- C. Total time in Catalog and Records 1 - 7
- D. Time in Catalog
- E. Time in Preparations
- F. Time in Catalog and Records for pieces going through either Catalog, Preparations or Both

The time in CSR before recorded included the 9, 517 pieces that went through I&D as well as the 2, 016 that went directly to Lending making a total of 11, 533 pieces used in the lapse time measurement in (A). Time in CSR after piece recorded (B) and total time in CSR (C) relates only to the 9, 517 pieces that went through I&D. Lapse time was not measured for the pieces that moved directly to Lending from CSR.

Half of the pieces were processed "prior to recording in CSR" in 5 days (the median). Although the largest number of pieces (11.3 o/o) were processed in 4 days (the mode) there was from 9 to 11 percent processed in each of the first 5 days. At the end of 2 weeks, 10 percent of the pieces had yet to be processed. Percentage wise, this is good, but if the 1100 pieces waiting for action were weeklies this would need to be improved. The order of processing Table T 6 shows that it takes 3 weeks to get the bulk of one day's receipts past the recording station. A study should be made to see if this could be reduced to 2 weeks or less -- Table T 6. Looking at the receipt date for pieces recorded on Nov. 16th for example, shows some of the pieces had been received as early as November 1. Pieces recorded on November 16th had been received on the following dates:

Pieces Received	Date Received
25	Nov. 1
94	Nov. 2 (Friday)
55	Nov. 5
36	Nov. 6
110	Nov. 7
6	Nov. 8
33	Nov. 9 (Friday)
76	Nov. 13
111	Nov. 14
2	Nov. 15

Further study should be made of the batching practice to see if the lag in processing could be improved. Present system shows pieces received at the first of the month are being processed all during the month.

Pieces move quickly to I&D after processing if no further action in Catalog or Preparations is required. All but 10 percent has moved in 1 day. The total time for receipt in CSR to receipt in Lending is 5 days for the mode, and in 6 days half of the pieces have moved.



PROCESSING OR TRANSIT TIME Table T 13  
For Pieces Received and Recorded in Current Serial Records  
in the Period Nov. 1-30, 1962

Page 1 - Catalog and Records Division

Pieces with Lapse Time Measured Between Stations 1/

LAPSE TIME			LAPSE TIME IN CSR								
			Before Pieces Recorded From ① to ③			After Pieces Recorded From ③ to ⑦			Total Lapse Time From ① to ⑦		
			Pieces No.	Percent of total		Pieces No.	Percent of total		Pieces No.	Percent of total	
				Each Day	Not Yet Process.		Each Day	Not Yet Process.		Each Day	Not Yet Process.
Work Weeks	or	Work Days		Pct.	Pct.		Pct.	Pct.		Pct.	Pct.
		0 2/	182	1.6	100	546	5.6	100	1	-	100
		1	978	8.7		7926	84.0	10	138	1.5	
		2	1177	10.5		206	2.2		518	5.5	
		3	1144	10.2	75	50	.5		834	8.8	
		4	1273	11.3		41	.4		931	9.8	75
1		5	1117	9.9	50	41	.4		1152	12.2	50
		6	1108	9.8		35	.4		1011	10.7	
		7	1003	8.9		39	.4		929	9.8	
		8	762	6.8		95	1.0		777	8.2	
		9	761	6.8	25	35	.4		684	7.2	25
2		10	389	3.5		48	.5		697	7.3	
		11	275	2.4	10	121	1.3		327	3.4	
		12	221	2.0		12	.1		349	3.7	
		13	169	1.5		78	.8		175	1.8	10
		14	162	1.5		4	.0		124	1.3	
3		15	94	.8		34	.4		153	1.6	
		16	50	.4		61	.7	1	108	1.1	
		17	36	.3		3	-		77	.8	
		18	20	.2		3	-		52	.6	
		19	37	.3		2	-		34	.4	
4		20	31	.3		4	-		33	.4	
5		21-25	101	.9		17	.2		173	1.8	
6		26-30	74	.7	1	17	.2		75	.8	
7		31-35	32	.3		1	-		38	.4	1
8		36-40	15	.1		3	-		21	.2	
10		41-50	27	.2		2	-		33	.4	
12		51-60	11	.1		3	-		15	.2	
14		61-70	3	-		5	1		3	-	
16		71-80	2	-		-	-		4	-	
18		81-90	3	-		1	-		6	.1	
20		91-100	-	-					1	-	
22		101-110	4	-					3	-	
24		111-120	-	-					1	-	
26		121-130	-	-					-	-	
28		131-140	1	-							
30		141-150									
32		151-160									
		More than 160									
Total 4/ Pieces			11,262	100		9433	100	3/	9477	100	
Av: Mode Days			4.00			1.00			5.00		
Median Days			4.78			0.56			6.16		
Mean Days			6.36			1.79			8.05		
Range Days			0 to 131			0 to 83			0 to 111		

1/ Key to Stations:

- ① — Received in CSR
- ③ — Recorded in CSR
- ④ — Sent to Acquisitions
- ⑤ — Received in Catalog
- ⑥ — Received in Preparations

- ⑦ — Received in I. D.
- ⑧ — Indexed in I. D.
- ⑨ — Typed
- ⑩ — Proofread
- ⑪ — Received in Lending
- ⑫ — Received in Reference

- 2/ Same as day Received
- 3/ Excludes 1985 pieces sent direct to Lending
- 4/ Pieces with invalid dates were omitted

PROCESSING OR TRANSIT TIME Table T 13 (cont)  
For Pieces Received and Recorded in Current Serial Records  
in the Period Nov. 1-30, 1962

Page 2 - Catalog and Records Division (Cont.)

Pieces with Lapse Time Measured Between Stations 1/

LAPSE TIME			Time in Catalog From (5) to (6) or 5 to (7) Skip (6) or 5 Direct to (11)			Time in Preparations From (6) to (7)			Time in Catalog, in Prep. or Both From (3) to (7) thru (5) or (6) or Both		
Work Weeks	or	Work Days	Pieces	Percent of total		Pieces	Percent of total		Pieces	Percent of total	
			No.	Each Day	Not Yet Process.	No.	Each Day	Not Yet Process.	No.	Each Day	Not Yet Process.
				Pct.	Pct.		Pct.	Pct.		Pct.	Pct.
		0 2/	1	.4	100	1	.5	100	-	-	
		1	20	8.0		13	6.0		3	1.1	100
		2	45	17.9	75	42	19.4	75	4	1.4	
		3	72	28.7	50	43	19.8	50	16	5.7	
		4	39	15.5	25	32	14.8		17	6.1	
1		5	24	9.5		18	8.3	25	30	10.7	75
		6	11	4.4		25	11.6		25	9.0	
		7	2	.8		12	5.6		36	12.8	50
		8	10	4.0	10	7	3.2	10	34	12.1	
		9	5	2.0		6	2.8		20	7.2	
2		10	4	1.6		2	.9		27	9.7	25
		11	1	.4		2	.9		13	4.6	
		12	3	1.2		-	-		8	2.9	
		13	1	.4		2	.9		3	1.1	
		14	-	-		3	1.4		8	2.9	
3		15	-	-		1	.5		3	1.1	
		16	1	.4		1	.5		-	-	
		17	3	1.2		-	-		2	.7	10
		18	1	.4		-	-		3	1.1	
		19	-	-		1	.5		1	.4	
4		20	-	-		-	-		3	1.1	
5		21-25	2	.8		1	.5		7	2.5	
6		26-30	-	-		-	-		3	1.1	
7		31-35	1	.4		-	-		1	.4	
8		36-40	-	-		-	-		2	.7	
10		41-50	1	.4		1	.5		2	.7	
12		51-60	2	.8	1	1	.5	1	3	1.1	
14		61-70	2	.8		-	-		-	-	
16		71-80	-	-		2	.9		4	1.4	1
18		81-90	-	-		-	-		1	.4	
20		91-100	-	-		-	-		-	-	
22		101-110	-	-		-	-		-	-	
24		111-120	-	-		-	-		-	-	
26		121-130	-	-		-	-		-	-	
28		131-140	-	-		-	-		-	-	
30		141-150	-	-		-	-		-	-	
32		151-160	-	-		-	-		-	-	
Total 4/ Pieces			251	100		216	100		279		
Av: Mode Days			3.00			3.00			7.00		
Median Days			2.83			3.28			7.26		
Mean Days			5.40			5.64			10.78		
Range Days			0 to 69			0 to 75			1 to 83		

1/ Key to Stations:

1) - Received in CSR  
3) - Recorded in CSR  
4) - Sent to Acquisitions  
5) - Received in Catalog  
6) - Received in Preparations

7) - Received in I. D.  
8) - Indexed in I. D.  
9) - Typed  
10) - Proofread  
11) - Received in Lending  
12) - Received in Reference

2/ Same as day Received  
4/ Pieces with invalid dates  
were omitted

PROCESSING OR TRANSIT TIME Table T 13 (cont)  
 For Pieces Received and Recorded in Current Serial Records  
 in the Period Nov. 1-30, 1962

Page 3 - Index and Documentation Division (I D)

Pieces with Lapse Time Measured Between Stations 1/

LASPE TIME			Time in I D for Pieces Indexed From (7) - (11) thru (8)			Time in I D for Pieces Not Indexed From (7) - (11) Skip (8)		
Work Weeks	or	Work Days	Pieces No.	Percent of total		Pieces No.	Percent of total	
				Each Day Pct.	Not Yet Process. Pct.		Each Day Pct.	Not Yet Process. Pct.
		0 2/	0	-		9	.1	100
		1	4	2	100	6391	87.1	10
		2	11	5		602	8.2	
		3	7	1		63	.9	
		4	26	1.4		24	.3	
1		5	29	1.4		51	.7	
		6	52	2.4		6	.1	
		7	76	3.6		4	.1	
		8	53	2.5		5	.1	
		9	29	1.4		6	.1	
2		10	34	1.6		4	-	
		11	40	1.9		0	-	
		12	29	1.4		8	.1	
		13	29	1.4		4	-	
		14	58	2.7		0	-	
3		15	36	1.7		0	-	
		16	30	1.4	75	1	-	
		17	19	.9		0	-	
		18	28	1.3		4	-	
		19	20	.9		2	-	
4		20	32	1.5		2	-	
5		21-25	94	4.4		7	.1	
6		26-30	100	4.7		14	.2	
7		31-35	117	5.5		12	.2	
8		36-40	109	5.1	50	5	.1	
10		41-50	168	7.9		11	.1	
12		51-60	102	4.8		18	.2	
14		61-70	141	6.6		12	.2	
16		71-80	106	5.0	25	5	.1	
18		81-90	75	3.5		5	.1	1
20		91-100	80	3.8		13	.2	
22		101-110	84	3.9		9	.1	
24		111-120	70	3.3	10	9	.1	
26		121-130	60	2.8		18	.3	
28		131-140	45	2.1		9	.1	
30		141-150	39	1.8		0	-	
32		151-160	65	3.1		5	1	
		More than 160	32	1.5	1	1	-	
Total 4/ Pieces			2129	100		7339	100	
Av: Mode Days			7.00			1.00		
Median Days			40.13			0.57		
Mean Days			54.51			2.80		
Range Days				1 to 176			1 to 164	

1/ Key to Stations:

- (1) --- Received in CSR
- (3) --- Recorded in CSR
- (4) --- Sent to Acquisitions
- (5) --- Received in Catalog
- (6) --- Received in Preparations

- (7) --- Received in I. D.
- (8) --- Indexed in I. D.
- (9) --- Typed
- (10) --- Proofread
- (11) --- Received in Lending
- (12) --- Received in Reference

2/ Same as day Received

4/ Pieces with invalid dates were omitted



PROCESSING OR TRANSIT TIME Table T 13 (cont)  
For Pieces Received and Recorded in Current Serial Records  
in the Period Nov. 1-30, 1962

Page 4 - Index and Documentation Division (Cont.)

Pieces with Lapse Time Measured Between Stations 1/

LAPSE TIME		Time Before Indexing Piece Marked "Circ" Copy From (7) to (8)			Time Before Indexing All Pieces From (7) to (8)			Time From Indexing to Typing From (8) to (9)			Time From Typing to Proofing From (9) to (10)		
Work Wks.	Work Days	Percent of total			Percent of total			Percent of total			Percent of total		
		Pieces No.	Each Day Pct.	Not Yet Process. Pct.	Pieces No.	Each Day Pct.	Not Yet Process. Pct.	Pieces No.	Each Day Pct.	Not Yet Process. Pct.	Pieces No.	Each Day Pct.	Not Yet Process. Pct.
	0 2/	-			246	11.6	100	19	.9	100	95	4.5	100
	1	91	22.2	100	349	16.4	75	108	5.1		1179	56.1	50
	2	138	33.7	50	111	5.3		201	9.4		335	15.9	25
	3	28	6.8		63	3.0		149	7.1	75	195	9.3	
	4	33	8.0		43	2.0		136	6.4		106	5.0	10
1	5	15	3.7	25	30	1.4		210	9.9		47	2.2	
	6	10	2.5		20	.9		54	2.6		19	.9	
	7	17	4.2		18	.9		83	3.9		39	1.9	
	8	7	1.7		16	.8		71	3.4	50	20	1.0	
	9	4	1.0		24	1.1		103	4.9		25	1.2	
2	10	4	1.0		16	.8		59	2.8		17	.8	
	11	7	1.7		14	.7		90	4.3		12	.6	1
	12	7	1.7		19	.9		58	2.7		1	-	
	13	9	2.2	10	24	1.1		47	2.2		-	-	
	14	7	1.7		11	.5		45	2.1		1	-	
3	15	1	.2		8	.4		40	1.9		1	-	
	16	1	.2		18	.8		38	1.8		5	.2	
	17	4	1.0		12	.6		53	2.5	25	1	-	
	18	3	.7		7	.3		44	2.1		-	-	
	19	3	.7		5	.2		34	1.6		-	-	
4	20	3	.7		17	.8	50	38	1.8		-	-	
5	21-25	9	2.2		75	3.5		134	6.4		2	.1	
6	26-30	-	-		71	3.3		84	4.0	10	1	-	
7	31-35	3	.7		66	3.1		53	2.5		-	-	
8	36-40	1	.2		41	1.9		45	2.1		-	-	
10	41-50	1	.2	1	116	5.5		52	2.5		-	-	
12	51-60	2	.4		138	6.5		21	1.0		-	-	
14	61-70	2	.4		99	4.6	25	16	1.0		-	-	
16	71-80	1	.2		42	2.0		10	.4	1	-	-	
18	81-90				106	5.0		7	.3		-	-	
20	91-100				73	3.4		2	.1		-	-	
22	101-110				77	3.6	10	7	.3		-	-	
24	111-120				68	3.2					-	-	
26	121-130				39	1.8					-	-	
28	131-140				29	1.4	1				-	-	
30	141-150				13	.6					-	-	
32	151-160				2	.1					-	-	
More than 160													
Total 4/ Pieces		411	100		2126	100		2111	100		2103	100	
Av: Mode Days		2.00			1.00			2.10			1.0		
Median Days		1.83			19.5			8.23			.82		
Mean Days		5.65			36.2			13.4			2.14		
Range Days		0 to 79			0 to 160			0 to 104			0 to 64		

1/ Key to Stations:

- (1) — Received in CSR
- (3) — Recorded in CSR
- (4) — Sent to Acquisitions
- (5) — Received in Catalog
- (6) — Received in Preparations

- (7) — Received in I. D.
- (8) — Indexed in I. D.
- (9) — Typed
- (10) — Proofread
- (11) — Received in Lending
- (12) — Received in Reference

- 2/ Same as day Received
- 4/ Pieces with invalid dates were omitted

PROCESSING OR TRANSIT TIME Table T 13 (cont)  
For Pieces Received and Recorded in Current Serial Records  
in the Period Nov. 1-30, 1962

Page 5 - From Catalog and Records to Public Services

Pieces with Lapse Time Measured Between Stations 1/

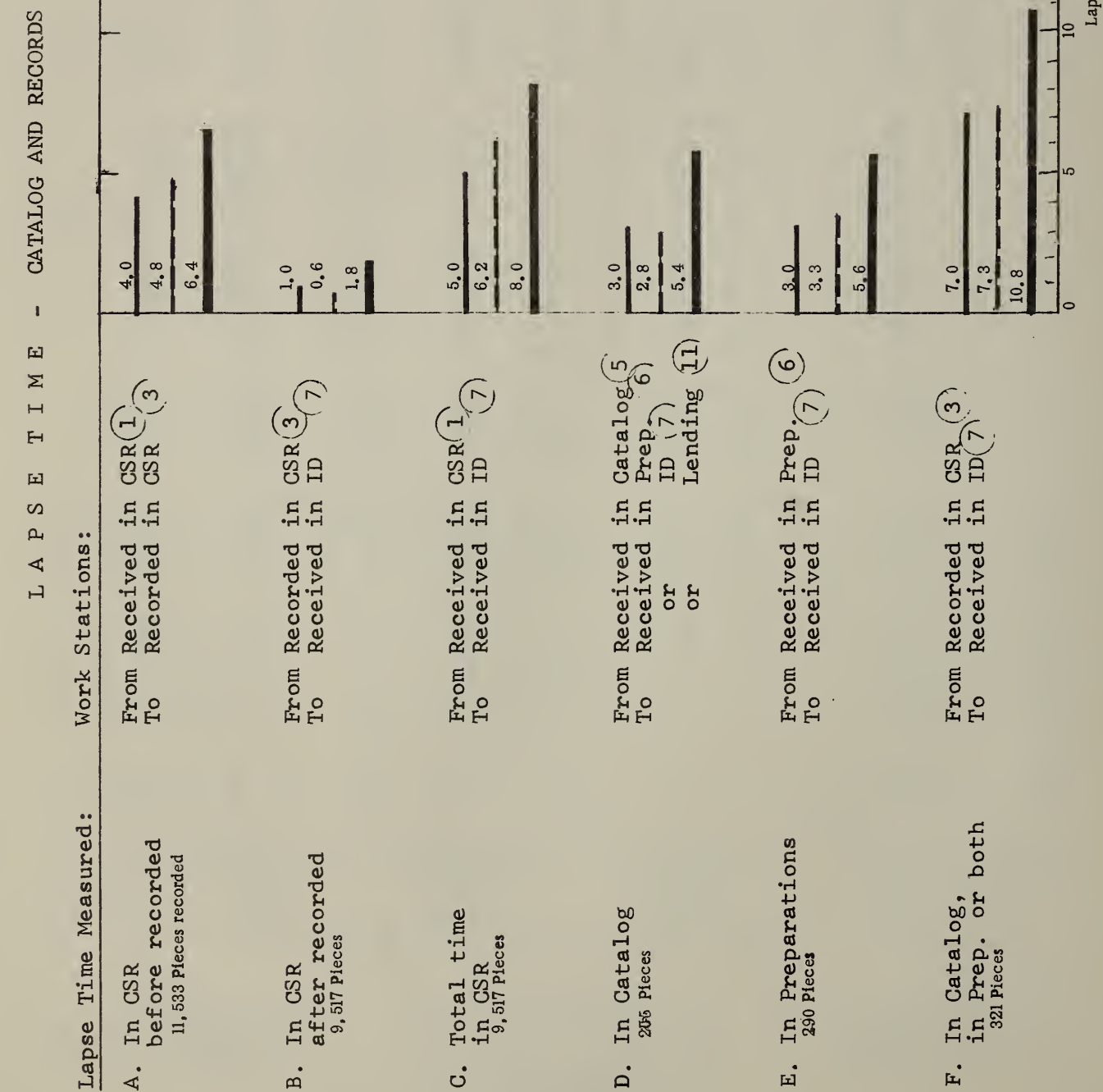
LASPE TIME			From Recorded in CSR to Lending From (3) to (11)						Total Time From Received in CSR to Lending (1) to (11)		
			For Pieces Skipping I D (7)			For All Pieces Recorded			All Pieces Recorded		
Work Weeks	or	Work Days	Pieces	Percent of total		Pieces	Percent of total		Pieces	Percent of total	
			No.	Each Day Pct.	Not Yet Process. Pct.	No.	Each Day Pct.	Not Yet Process. Pct.	No.	Each Day Pct.	Not Yet Process. Pct.
1		0 2/	118	6.6	100	180	1.6	100	3	-	100
		1	1318	73.3	25	1624	14.4		42	4	
		2	174	9.7	10	5761	51.3	50	302	2.7	
		3	31	1.7		447	4.0		539	4.8	
		4	12	.7		362	3.2		788	7.0	
		5	11	.6		62	.6	25	890	7.9	75
		6	5	.3		47	.4		987	8.7	
		7	10	.6		83	.8		911	8.1	
		8	22	1.2		72	.6		886	7.8	50
		9	2	.1		72	.6		732	6.5	
2		10	2	.1		61	.5		573	5.1	
		11	46	2.6		109	1.0		679	6.0	
		12	6	.3		149	1.3		363	3.2	
		13	-			82	.7		338	3.0	
		14	-			71	.6		225	2.0	
3		15	2	.1		54	.5		170	1.5	25
		16	2	.1		70	.6		178	1.6	
		17	-			69	.6		127	1.1	
		18	-			20	.2		109	1.0	
		19	1	-		33	.3		89	.8	
4		20	7	.4		72	.7		62	.5	
		21-25	10	.6		120	1.1		325	2.9	
		26-30	-	-		111	1.0		126	1.1	
		31-35	2	.1	1	128	1.1		153	1.3	
		36-40	-	-		117	1.0		155	1.4	
10		41-50	5	.3		210	1.9	10	327	2.9	
		51-60	-			119	1.1		190	1.7	10
		61-70	1			141	1.2		125	1.1	
		71-80	2	.1		131	1.2		145	1.3	
		81-90	-			81	.7		96	0.8	
20		91-100	1			100	1.0		100	0.9	
		101-110	1			81	.7		103	.9	
		111-120	-			81	.7		71	.6	
		121-130	-			112	1.0		92	.8	
		131-140	1			49	.4		85	.7	
30		141-150	1			38	.3		57	.5	
		151-160	-			75	.7	1	50	.4	1
		More than 160	5	.3		50	.4		101	.9	
Total 4/ Pieces			1798	100		11,244	10.0		11,294	100	
Av: Mode Days			1.00			2.00			6.00		
Median Days			.63			1.59			8.41		
Mean Days			2.79			14.2			20.6		
Range Days			0 to 169			0 to 268			0 to 294		

1/ Key to Stations:

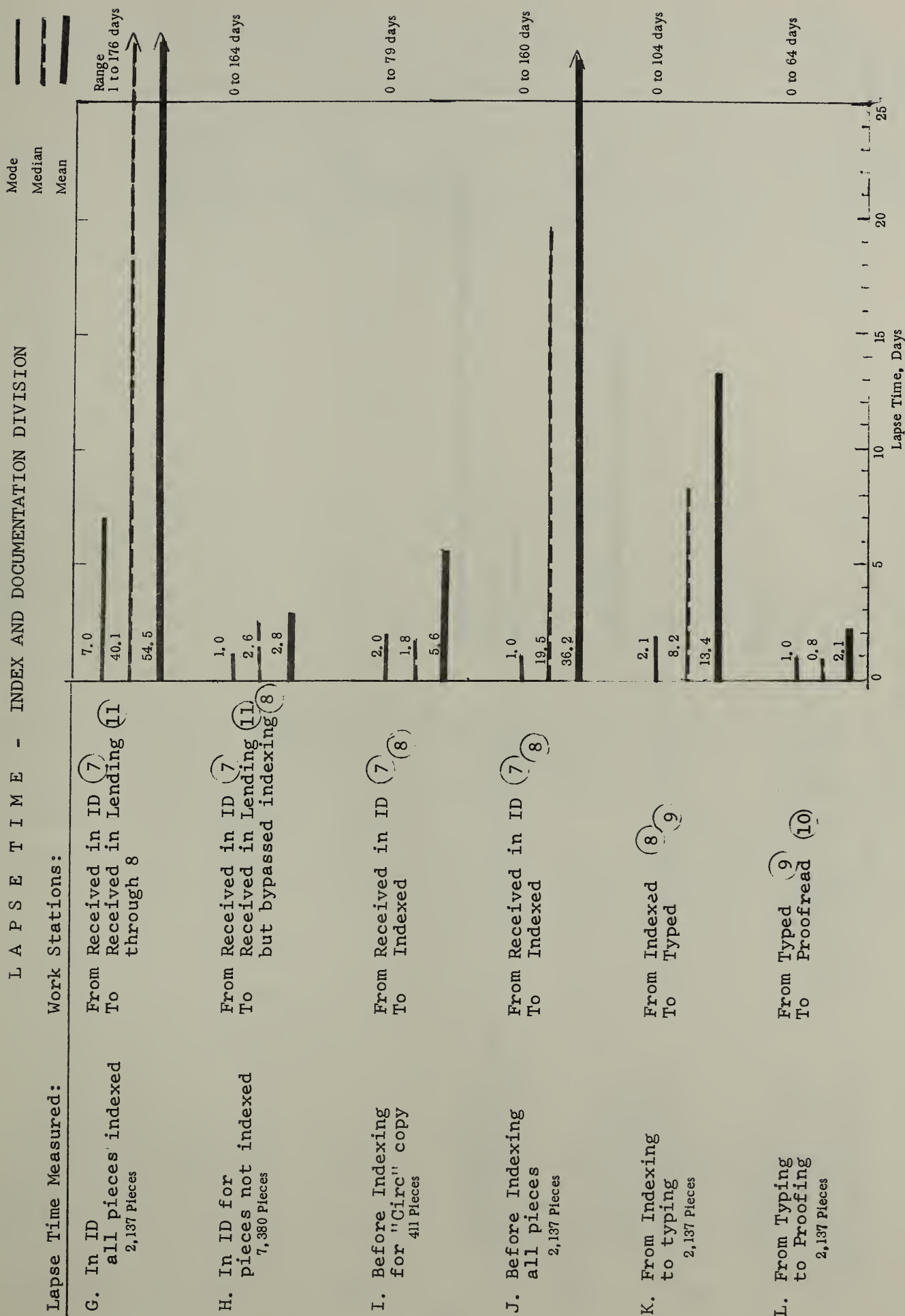
- (1) — Received in CSR
- (3) — Recorded in CSR
- (4) — Sent to Acquisitions
- (5) — Received in Catalog
- (6) — Received in Preparations

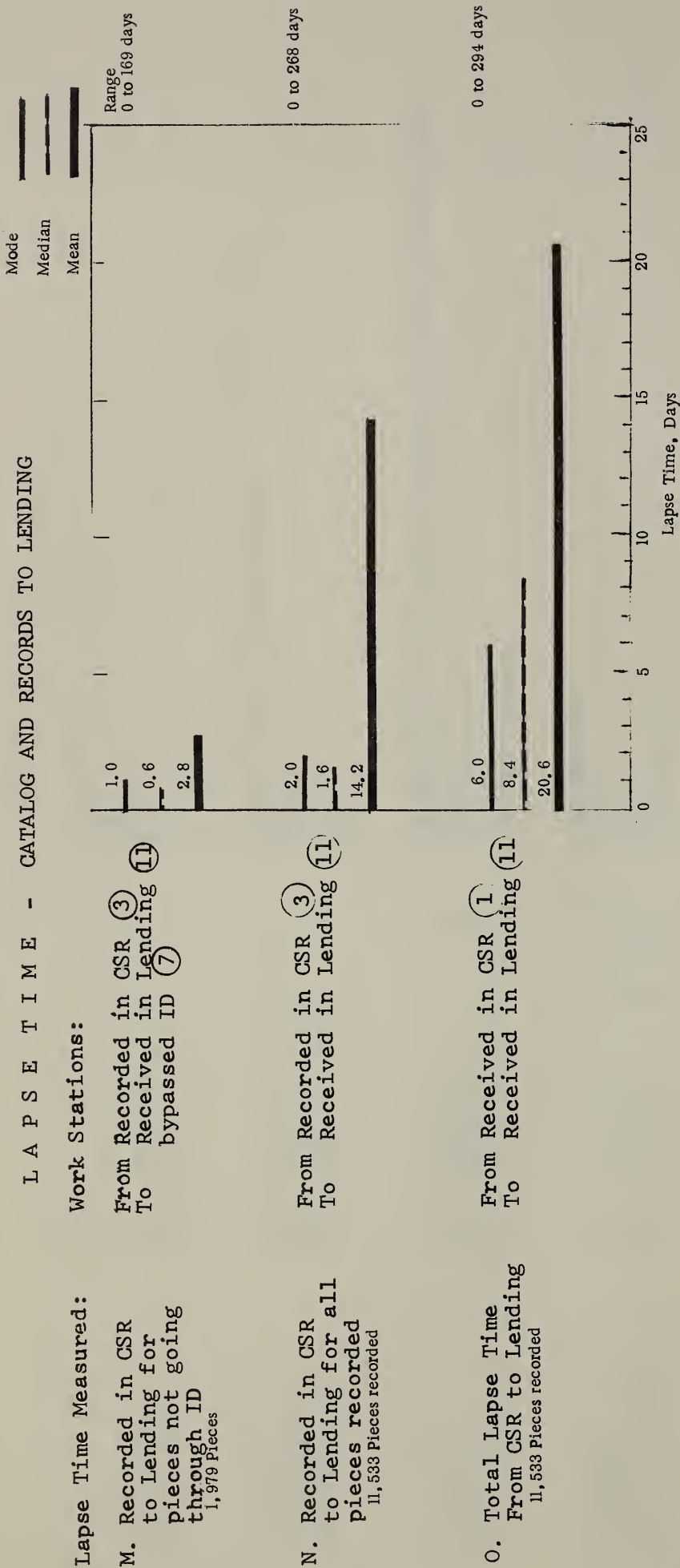
- (7) — Received in I. D.
- (8) — Indexed in I. D.
- (9) — Typed
- (10) — Proofread
- (11) — Received in Lending
- (12) — Received in Reference

- 2/ Same as day Received
- 4/ Pieces with invalid dates  
were omitted









SUMMARY - LAPSE DAYS FOR VARIOUS PERCENTAGES NOT YET PROCESSED 1/

## Catalog and Records

Not Yet Processed Percent	Current Serial Records			Time In Catalog 5/ Days	Time In Prep. 6/ to 7/ Days	Time In Cat. Prep. or Both 6/ Days
	Before Pieces Recorded 1/ to 3/	After Pieces Recorded 3/ to 7/	Total Time 1/ to 7/			
	Days	Days	Days			
1	26-30	16	31-35	51-60	51-60	71-80
10	11	1	13	8	8	17
25	9		9	4	5	10
50	5		5	3	3	7
75	3		4	2	2	5
100 2/	0	0	0	0	0	1
Total pieces	3/ (11,262) 4/ 11,533	(9433) 9,517	(9477) 9,517	(251) 255	(216) 254	(279) 290
Average, Days:						
Mode	4.00	1.00	5.00	3.00	3.00	7.00
Median	4.78	0.56	6.16	2.83	3.28	7.26
Mean	6.36	1.79	8.05	5.40	5.64	10.78
Highest, Days	131	83	111	69	75	83

## Index and Documentation (I D)

Not Yet Processed Percent	Total Time In I D		Time Before Indexing		Indexing To Typing 8/ to 9/ Days	Typing To Proofing 9/ to 10/ Days
	Pieces Indexed 7/ to 11/ Thru 8	Pieces Not Indexed 7/ to 11/ Skip 8	Piece Marked "Circ" Copy 7/ to 8/	All Pieces 7/ to 8/		
	Days	Days	Days	Days		
1	164	8-90	41-50	131-140	71-80	11
10	111-120	1	13	101-110	26-30	4
25	71-80		5	61-70	17	2
50	36-40		2	20	8	1
75	16			1	3	-
100 2/	1	0	1	0	0	0
Total pieces	3/ (2129) 4/ 2137	(7339) 7380	(411) 411	(2126) 2137	(2111) 2137	(2103) 2137
Average, Days:						
Mode	7.00	1.00	2.00	1.00	2.10	1.00
Median	40.13	2.57	1.83	19.5	8.23	.82
Mean	54.51	2.80	5.65	36.2	13.4	2.14
Highest, Days	176	164	79	160	104	64



# SUMMARY - LAPSE DAYS FOR VARIOUS PERCENTAGES NOT YET PROCESSED (Cont.)

From Catalog and Records to Lending Table T 17 (cont)

Not Yet Processed  Percent	From Recorded in CSR To Lending		From Received in CSR To Lending For All Pieces Recorded (1) to (11) Days
	Pieces Skipped I D (3)-(11) Skip (7)	All Pieces 7/ Recorded (3)-(11)	
	Days	Days	
1	31-35	151-160	151-160
10	2	41-50	51-60
25	1	5	15
50		2	8
75			5
100 2/	0	100	100
Total pieces in Single Period	3/ 1798 4/ 1979	11,244 11,533	11,294
Average, Days:			
Mode	1.00	2.00	6.00
Median	.63	1.59	8.41
Mean	2.79	14.2	20.6
Highest, Days	169	268	294

## 1/ Key to Stations:

- |                              |                            |
|------------------------------|----------------------------|
| (1) Received in CSR          | (7) Received in I. D.      |
| (3) Recorded in CSR          | (8) Indexed in I. D        |
| (4) Sent to Acquisitions     | (9) Typed                  |
| (5) Received in Catalog      | (10) Proofread             |
| (6) Received in Preparations | (11) Received in Lending   |
|                              | (12) Received in Reference |

2/ Same as day piece received

3/ Pieces with invalid dates were omitted

4/ Total Pieces that moved including invalid dates

5/ From (5) to (6) or (5) to (7) Skip (6), or direct to (11)

6/ From (3) to (7) through (5), or (6), or both

7/ Not included are 242 Pieces moved direct to Reference

#### Time for Pieces Going Through Either Catalog or Preparations or Both

As seen in the Volume Flow Chart relatively few pieces required Catalog or Preparations action, but this required more time as many combinations of action were required. The 255 pieces that required time in Catalog regardless of other action ( 5 to 6; 5 to 7 skip 6; or 5 to 11 direct) took from 0 (same day as received) to 69 days, with the averages ranging from 3 to 5-1/2. In 8 days all but 10 percent had been processed. The 254 pieces acted on in Preparations took up to 75 days, but the averages showed from 3 to 6 days and the percentages not yet processed follow a pattern similar to time in Catalog. Many pieces that required Catalog action also needed Preparations action so that the total time between for pieces going through either or both was: mode 7 days, median 7 days and mean 11 days. The 10 percent not yet processed was reached after 17 days had lapsed.

#### Time in I & D

The lapse time measured in Indexing and Documentation where only 1/4 stop over for indexing for the Bibliography were as follows:

- G. Time in I&D for the 2,137 pieces indexed 7 - 11 through 8
- H. Time in I&D for pieces not indexed 7-11 skip 8
- I. Time before indexing for "circ" copies 7 - 8
- J. Time before indexing for all copies 7 - 8
- K. Time from indexed to type 8 - 9
- L. Time from typing to proofing 9 - 10

Of the 7,380 pieces that were not indexed, all but 5 percent moved through I&D in 2 days. The remaining 340 were spread out over 162 days. This small group represents pieces that are held for indexing, but finally are not indexed due to the translation difficulties or are not ready in time to meet the tight time schedule of the monthly Bibliography of Agriculture, or the periodical loses its currency because of delays, hence is omitted from the B. of A.

Of the 2,137 pieces indexed, there were 411 marked "circ" (to be circulated, therefore needs rush treatment) and these pieces are supposed to be expedited through I&D. To find out if this was true these pieces were identified and a comparison made -- see Table T 17. The median for "circ" copies was 2 days compared with 20 days for all copies, and the arithmetic mean was 6 days compared with 36 days. However, 5 percent of the "circ" pieces took from 14 to 20 days, and 5 percent from 21 to 80 days. This should be improved if it occurs as a regular thing.

The time from indexing to typing measures publication delay after indexing. The Bibliography is published monthly which is generally a 20-day working cycle. In the first 20 days 80 percent of the pieces indexed had been typed and it can be assumed, included in the current issue of the B. of A. The next 15 percent were typed by the end of 40 days to meet the next issue after the current one; and 34 percent waited for the third issue (60 days), while 42 pieces waited for the 4th or 5th issue. Some control should be exercised so that issues that are indexed do not wait beyond the second issue of the Bibliography.

#### Total Time From Receipt in Current Serial Records to Available to the Borrower in Lending

Of the 11,533 pieces received in November 1962, the largest number traveled to Lending in 6 days (mode), and half were received in Lending in 8-1/2 days. Twenty-five percent were not available to the Borrower in 15 days equivalent to 3 weeks; 10 percent were not available in 60 days or 12 weeks, and 1 percent (about 100 pieces) took more than 60 days.

This study indicates that most pieces are processed in a fairly short time, but as high as 10 percent takes quite a long time. Special studies need to be made to determine how to identify and move along any periodical that has not reached Lending in say 1 month's time. Even a month's time is probably too long a delay for a weekly.

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